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Ontario
Dept. of Highways
Report



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ONTARIO

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Annual Report

OF THE

Department of Highways

ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1958

1959/60

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THE LEGISLATIVE ASSEMBLY OF ONTARIO

SESSIONAL PAPER No. 20

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1958

TO THE HONOURABLE JOHN KEILLER MACKAY,
D.S.O., V.D., LL.D.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1958.

Respectfully submitted,

FREDERICK M. CASS,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
February 23, 1959.



TO THE HONOURABLE JAMES N. ALLAN,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1958.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

W. J. FULTON,
Deputy Minister

Department of Highways, Ontario,
April 15, 1958.



On April 26, 1958, The Honourable James N. Allan was sworn in as Provincial Treasurer and was succeeded as Minister of Highways by The Honourable Fred M. Cass, Q.C., and as Minister of Transport by The Honourable M. B. Dymond, M.D. Mr. Allan was appointed Minister of Highways in January, 1955, and Minister of Transport in June, 1957. Shown above on the occasion of the change in cabinet portfolios are (left to right): The Honourable M. B. Dymond, M.D., The Honourable James N. Allan, The Honourable Leslie M. Frost, Q.C., Prime Minister of Ontario, and The Honourable Fred M. Cass, Q.C.

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KENNETH H. SIDDALL, P.Eng.

A distinguished career of 33 years with the Ontario Department of Highways ended with the death of Kenneth H. Siddall, P.Eng., Planning Engineer, on November 12, 1958.

Starting as a rodman at the age of 17, Ken Siddall specialized in location surveying and, in close association with William J. Fulton, played an important part in the development of a new concept for modern highways in Ontario. From the extension of Highway 7 to Perth in 1931 until his death on active duty as a representative of the Department, Mr. Siddall was engaged on the improvement of the provincial highway system including such major projects as the planning of the Queen Elizabeth Way, Canada's first dual-lane highway, Highway 400, Highway 401, the Ontario route of the Trans-Canada Highway, and the Burlington Bay Skyway.

In 1936, Mr. Siddall developed and organized the use of photogrammetry for road location surveys under Mr. Fulton and made the Department a pioneer in this field. As a result of his broad experience, he rendered special wartime service in 1942-43 as an adviser to the U.S. Army Corps of Engineers on the location of the Alaska Highway.

An excellent organizer and administrator and an indefatigable worker, Mr. Siddall helped to organize the Traffic Section of the Department and, with his appointment as Planning Engineer, also was responsible for the Economics and Statistics, Location and Priorities Sections of the Planning and Design Branch. Devoted to his work and recognized as an outstanding authority in his field, Ken was held in highest regard by all of his associates in the Department.

SUMMARY REPORT ON DEPARTMENT OPERATIONS

W. J. FULTON, Deputy Minister



With the completion of a two-year engineering study of all King's Highways and Secondary Highways, a most comprehensive report was presented in the Legislature on March 28, 1957, under the title "A Plan for Ontario Highways." This report contained an objective appraisal of the existing condition of 11,000 miles of Provincial highways and estimated future highway needs with full regard for the great increase in motor vehicle traffic that is expected over the next 20 years. This report served as

the basis for the record construction programme which was undertaken and completed by the Department in the fiscal year ended March 31, 1958, and which was continued in the following year.

Total net expenditure by the Department was \$212,764,943 in the fiscal year under review as compared with \$200,850,551 in 1956-1957. Expenditures, as reported by the Financial Comptroller, can be summarized as follows:

Gross Capital Payments on Construction of King's Highways and Secondary Highways.....	\$127,792,668
Less Recoveries on (1) Trans-Canada Highway, (2) re-location of Highway No. 2 under agreement with the Hydro-Electric Power Commission of Ontario, and (3) Ottawa Queensway.....	15,528,546
Net Capital Payments on Construction of King's Highways and Secondary Highways.....	\$112,264,122
Ordinary Expenditures on King's Highways and Secondary Highways including Maintenance and General Operating Expense.....	42,231,904
Provincial subsidies on Municipal Roads and Streets and cost of Development Roads and roads in unincorporated townships.....	58,268,917
	<u>\$212,764,943</u>

Some 234 capital contracts were completed including 395 miles of paving, 93 structures and 420 miles of grading. In addition, 152 ordinary expenditure contracts were completed which included 40.6 miles of resurfacing and 308 miles of surface treatment.

During 1957-1958, the Department awarded some 241 capital contracts with a value of \$77,737,000. These contracts provided for 470 miles of grading, 337 miles of paving and 82 structures.

Major projects in progress included: the Burlington Bay Skyway and reconstruction of the Queen Elizabeth Way to the status of a fully-controlled access six-lane highway; Highway No. 401, on which the sections by-passing London, Ingersoll and Woodstock, and Kingston, were put into operation; the Ontario section of the Trans-Canada Highway; and re-location of Highway No. 2 to by-pass areas to be flooded with the completion of the St. Lawrence

Seaway development. Work was started on the Ottawa Queensway and the first contract was awarded on the Rainy Lake Causeway.

To facilitate and expedite the large volume of contract work required by the long-term construction programme, the Department has introduced a series of revised or new procedures to govern relations with contractors. The "Liquidated Damages" clause, introduced late in 1956-1957 on certain important contracts, has been effective and has been applied to most of the contracts let during the current year. In October, 1957, a system of pre-qualification for contractors tendering on larger contracts was introduced and the results should become apparent in 1958. During the past year there was a complete revision of "General Conditions of the Contract" which became effective April 1, 1958. The public opening of tenders on all contracts and the award of contracts to the lowest bidder have been satisfactory to both the Department and the contracting industry. Construction contracts to the value of \$27,279,000 were awarded during the five months ending March 31, 1958, to assist contractors to plan their work for an early start in the 1958 construction season.

The Department's index of tender prices paid on road contracts was 135.4 for 1957-1958 as compared with 156.8 in the previous year and 100 in the base year 1950-1951. The index of prices paid on construction materials purchased by the Department was 124.3 for 1957-1958 as compared with 112.6 in 1956-1957.

The shortage of professional engineers handicapped the Department in 1956 and the early part of 1957. Special measures were taken to recruit graduate engineers and there was some improvement with 328 engineers employed in February, 1958, as compared with 272 a year previous. Training courses for Department personnel, which were organized in 1956, have been developed further to enable employees to advance to positions of greater responsibility.

The Joint Highway Research Programme, which was initiated in 1956 with the co-operation of the University of Toronto and Queen's University, was well under way in 1957 with 18 research projects in progress and further projects scheduled. Most of these special studies require two to three years of work and it is expected that several reports will be completed in 1958.

As of July 1, 1957, the Motor Vehicles Branch was transferred to the new Department of Transport of which the Honourable James N. Allan, Minister of Highways, is also Minister. The Motor Vehicles Branch had been a part of the Department of Highways since May 1, 1916.

During 1957, the Department started an engineering study of Ontario's municipal rural roads and urban streets with the co-operation of municipal authorities. The results of this study combined with data on the King's Highway system will form the basis of a report to be issued early in 1959 which will provide a most comprehensive picture of the present and future needs of the entire Provincial highway, road and street system.

In January, 1958, a new Electronic Computing Section was established after nearly two years of investigation and experimental work. This section is under the direction of a special committee which deals with business machine facilities. Electronic computations include work for the road design and bridge design sections, checking contracts which have been completed, property surveys, and other sections of the Department with a great saving in time and manpower.

REPORT OF THE FINANCIAL COMPTROLLER**COMPTROLLER, J. G. McMILLEN**

The following Statements outline the expenditure, contract commitments and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1958.

- I. Ordinary Expenditure (page 11)
- II. Capital Payments, including Expenditure Summary (page 12)
- III. Summary of contract commitment status (page 13)
- IV. Trans-Canada Highway (page 13)
- V. The "Queensway" — Ottawa (page 14)
- VI. Receipts (page 14)
- VII. Comparison of Average Unit Prices paid on Contracts (page 15)

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total Ordinary Expenditure and Capital Payments at \$212,764,943, excluding transfer of funds to the "Highway Construction Account." The following is a comparison of total expenditures with previous years:

Year ending March 31:

1953.....	\$121,749,833
1954.....	116,068,211
1955.....	113,445,647
1956.....	158,859,908
1957.....	200,850,551
1958.....	212,764,943

Highway Construction Account

It will be noted that Ordinary Expenditure (Statement I) sets out a transfer to "Highway Construction Account" of \$57,500,000. This account, previously designated the "Highway Reserve Account," is for the purpose of providing Ordinary Account funds for road construction purposes, thus reducing Capital funds otherwise required.

Trans-Canada Highway Agreement

Expenditure of the Department under this Agreement is shown in Statement IV in the amount of.....	\$90,702,624
with funds recovered or recoverable of.....	44,907,262

and a net cost to the Department of.....	\$45,795,362.
------------------------------------------	---------------

Pre-qualification of Contractors

During the year ending March 31, 1958 a system of pre-qualification of contractors was introduced by the Department. Its objective is to provide an administrative routine to ensure that any contractor who wishes to bid on certain major contracts called for tender by the Department is financially and technically capable of performing the work within the specified time should he be awarded the contracts.

Contractors wishing to bid on contracts governed by these procedures are required to submit annually certain information to the Financial Comptroller, Qualification Division. From this information, ratings are derived which are based on the following factors:

- (a) Liquid assets
- (b) Fixed assets plus their suitability for various classifications of work.

The above ratings are adjusted by reason of —

- (c) Lack of construction experience, condition of equipment, violation of the Department's procedures, etc.
- (d) Amount of work on hand and in progress.

Applications for ratings were received from some 135 contractors prior to the end of the year. Nineteen contracts requiring qualification were awarded with an average of 11 bids received per contract. This compared with an average of 8 bids per contract for all capital contracts awarded in the period.

In the initial stages we required qualification on larger contracts only. When our experience warrants, we intend to widen the application of qualification to include at least a proportion of the smaller contracts.

Index of Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following indexes are submitted:

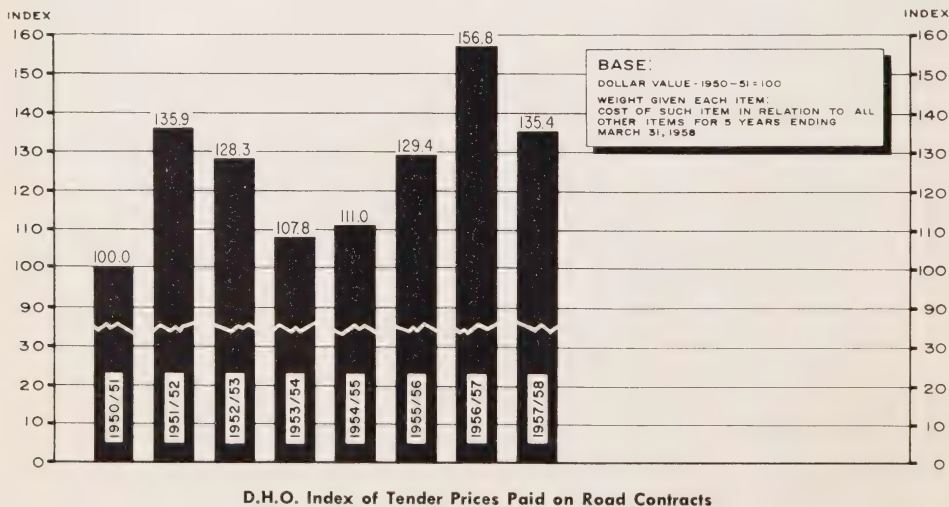
- Index of Tender Prices paid on Road Contracts
- Tender and Material Price Indexes.

It is evident from the accompanying indexes that:

Unit prices on contracts awarded have dropped during the year, while prices paid for road materials have increased.

In the period covered by the indexes, the trend in both contract and material prices is upwards.

The prices paid for road materials are tending to approach the index level of contract prices paid.



STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Year Ending March 31, 1958

Maintenance of King's Highways and Secondary Roads —

Winter maintenance	\$10,090,121
Operation and maintenance of equipment.....	5,030,712
Hot mix patching.....	2,398,647
Gravel application.....	2,658,149
Oil dust layer.....	1,008,132
Calcium dust layer.....	420,387
Surface treatment.....	577,624
Zone painting.....	478,691
Bridge repair and painting.....	247,865
Forestry operations.....	235,933
Ferry operations.....	206,013
Resurfacing by mulch.....	201,434
Flood and storm damage repairs.....	150,768
Electrical services.....	136,716
Engineering overhead, general district office ware- housing expenses, roadside maintenance, com- munications, etc.....	7,988,268

\$31,829,460

Repaving of present roads..... 1,809,450

Maintenance of development roads..... 299,057

Maintenance of roads in unincorporated townships in northern Ont..... 600,194

Total (see Appendices 1 and 2 for distribution of above expenditures by counties,
districts, roads, etc.)..... 34,538,161

General Operating Expenditures —

Purchase of new trucks, tractors, graders, sanders, snow plows and other road equipment.....	\$ 3,049,609
Printing and stationery.....	710,234
Office furniture and equipment.....	412,583
Workmen's compensation and insurance.....	328,983
Unemployment insurance stamps.....	187,434
Maintenance of buildings and area office rentals.....	179,505
Bus rentals.....	59,687
Teletype rentals.....	57,405
Staff training.....	46,536
Recoverable expenditures.....	83,434

5,115,410

Main Office (including Municipal Roads Branch) Administrative and

Clerical Staff.....	\$ 2,722,827
Travelling expenses.....	269,827
Sundry overhead.....	234,210

3,226,864

Roads, publicity, maps, etc. 154,924

Old Fort Henry expenses (net) 95,796

Municipal Subsidies —

County roads.....	\$ 4,660,209
Township roads.....	9,674,351
Cities, towns and villages.....	6,960,270

21,294,830

TOTAL ORDINARY EXPENDITURES..... \$64,425,985

NOTE: Including transfer of funds to the Highway Construction

Account in the amount of..... \$ 57,500,000

The Ordinary Expenditure per Public Accounts — total..... \$121,925,985

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Year Ending March 31, 1958

Construction of King's Highways and Secondary Roads —

Payments to contractors.....	\$ 71,885,319	
Material and sundry contract expenditures.....	22,676,218	
Engineering.....	7,002,673	
		<u>\$101,564,210</u>
Construction of development roads.....		5,484,152
Construction of roads in unincorporated townships in northern Ont....		401,917
		<u>\$107,450,279</u>

Expenditures allocated directly to the above roads —

Property purchases.....	\$ 11,932,080	
Land surveys.....	2,258,651	
Planning and design.....	3,471,962	
		<u>17,662,693</u>

Total (see Appendices 1 and 2 for distribution of above expenditures by counties, districts, roads, etc.)..... \$125,112,972

Expenditures of Head Office branches not allocated directly to roads —

Construction of new buildings.....	\$ 2,138,640	
Planning and design.....	1,759,620	
Property.....	1,261,737	
Land surveys.....	1,190,776	
Materials and research.....	944,864	
Engineering audit.....	447,056	
Supply (Bailey Bridge parts and steel).....	359,318	
Recoverable expenditures.....	401,493	
Claims committee fees and sundry.....	62,261	
		<u>8,565,765</u>

Municipal Subsidies —

County roads.....	\$ 9,171,955	
Township roads.....	8,855,860	
Cities, towns and villages.....	12,160,952	
		<u>30,188,767</u>

TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION..... \$163,867,504

Less Recoveries —

Trans-Canada Highway.....	\$ 12,381,361	
St. Lawrence Seaway.....	2,942,685	
Ottawa Queensway.....	204,500	
		<u>\$ 15,528,546</u>

NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS..... \$148,338,958

EXPENDITURE SUMMARY

Ordinary expenditure.....	\$ 64,425,985	
Capital payments — net.....	148,338,958	
		<u>\$212,764,943</u>
Transfer to Highway Construction Account.....		57,500,000
TOTAL — including transfer to Highway Construction Account		<u>\$270,264,943</u>

STATEMENT III

SUMMARY OF CONTRACT COMMITMENT STATUS AS AT MARCH 31, 1958

TENDER VALUE ONLY

	CONTRACTS AND PROJECTS		
	CONSTRUCTION	MAINTENANCE	TOTAL
Outstanding Commitments at April 1, 1957	\$64,021,629	\$ 1,000,489	\$65,022,118
Contracts Let in Year Ending March 31, 1958.	58,260,400	6,150,215	64,410,615
Supplementary Additions to Contracts.....	3,689,619	109,703	3,799,322
	\$125,971,648	\$ 7,260,407	\$133,232,055
Deduct:			
Payments and Sundry Adjustments.....	73,433,313	5,597,889	79,031,202
Outstanding Commitments at March 31, 1958..	\$52,538,335	\$ 1,662,518	\$54,200,853

STATEMENT IV

TRANS-CANADA HIGHWAY

The following statement shows the expenditure on account of the Trans-Canada Highway since the signing of the agreement with the Federal Government on April 24th, 1950 and the following agreement signed July 27th, 1956 and the refund received from the Federal Government since that date to March 31st, 1958.

It also shows further claims to be submitted and the refunds due on those claims.

	REFUNDED BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Refunded by Federal Government on account of Work performed prior to April 24, 1950.....	\$ 1,569,640.35	
Expenditures by Department to March 31, 1951.....		\$ 7,043,559.23
Refunded by Federal Government to March 31, 1951.....	2,749,328.63	
Expenditures by Department to March 31, 1952.....		8,242,800.65
Refunded by Federal Government to March 31, 1952.....	3,453,866.43	
Expenditures by Department to March 31, 1953.....		11,746,130.41
Refunded by Federal Government to March 31, 1953.....	4,103,752.94	
Expenditures by Department to March 31, 1954.....		9,686,451.83
Refunded by Federal Government to March 31, 1954.....	2,486,859.69	
Expenditures by Department to March 31, 1955.....		5,675,343.25
Refunded by Federal Government to March 31, 1955.....	6,274,487.50	
Expenditures by Department to March 31, 1956.....		9,602,298.56
Refunded by Federal Government to March 31, 1956.....	3,365,958.81	
Expenditures by Department to March 31, 1957.....		13,996,280.17
Refunded by Federal Government to March 31, 1957.....	4,855,053.08	
Expenditures by Department to March 31, 1958.....		20,683,305.80
Refunded by Federal Government to March 31, 1958.....	12,381,361.51	
Expenditure by Department re Property, etc.....		4,026,454.31
TOTALS TO MARCH 31ST, 1958.....	\$41,240,308.94	\$90,702,624.21
Claims to be submitted on above expenditure:		
Claim No. 57.....	1,327,556.29	
Claim No. 58.....	575,717.32	
Claim No. 59.....	1,529,069.58	
Claim No. 60.....	234,610.28	
	\$44,907,262.41	
Less refunds by Federal Government.....		44,907,262.41
Net estimated cost to D.H.O. to March 31, 1958.....		\$45,795,361.80

STATEMENT V THE "QUEENSWAY" OTTAWA

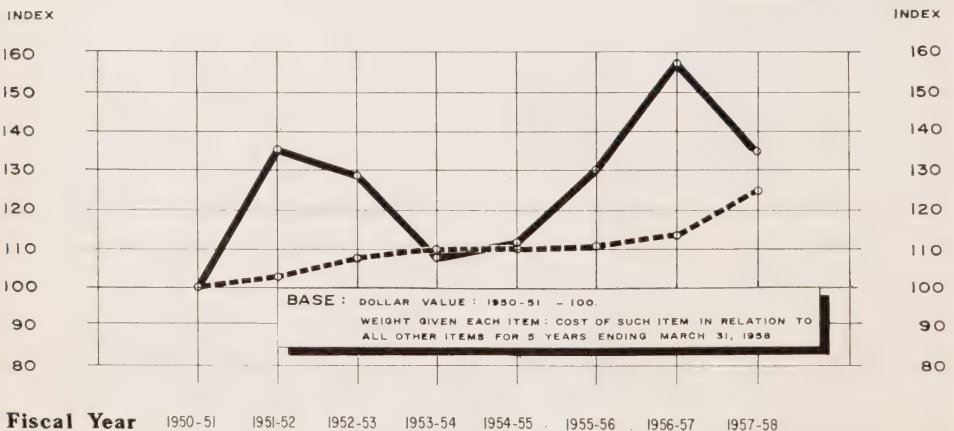
The following statement shows the expenditure on account of the "Queensway" Ottawa since the signing of the agreement with the Federal Government, The Federal District Commission and the City of Ottawa on March 19th, 1957 and the refunds received since that date to March 31st, 1958.

It also shows further claims to be submitted and refunds due on those claims.

	REFUNDED BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Expenditures by Department to March 31, 1958.....		\$563,956.15
Refunded by Federal Government to March 31, 1958.....	\$204,500.00	
TOTALS TO MARCH 31, 1958.....	\$204,500.00	\$563,956.15
Claims submitted on above expenditure:		
Claim No. 3.....	30,759.02	
Claim No. 4.....	15,379.51	
Less refunds by Federal Government.....		250,638.53
Net estimated cost to D.H.O. to March 31, 1958.....		<u>\$313,317.62</u>

STATEMENT VI STATEMENT OF RECEIPTS For the Fiscal Year Ending March 31, 1958

Sales of land and buildings.....	\$ 741,965
Property rentals.....	210,609
Sale of services and materials.....	185,287
Permits — sign and house moving.....	45,245
Gas pump revenue.....	37,224
Gas line franchises.....	7,710
Miscellaneous.....	69,344
	<u>\$1,297,384</u>
Distribution —	
Ordinary revenue.....	\$ 534,922
Capital receipts.....	762,462
TOTAL RECEIPTS.....	<u>\$1,297,384</u>



Fiscal Year 1950-51 1951-52 1952-53 1953-54 1954-55 1955-56 1956-57 1957-58

Solid Line—D.H.O. Index of Tender Prices Paid on Road Contracts.
Broken Line—D.H.O. Index of Prices Paid on Construction Materials Purchased.

STATEMENT VII

COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS
(for items used for price index purposes)

For Period April 1, 1950 to March 31, 1958

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Exca- vation Cu. Yd.	Rock Exca- vation Cu. Yd.	Gran- ular "A", Ton	Gran- ular "B", Ton	5/8" Crushed Gravel "A", Ton	5/8" Crushed Gravel "B", Ton	Bitu- minous Hot Mix Top Course Ton	Bitu- minous Hot Mix Base Course Ton	Sand Cushion Ton	Earth Com- paction Cu. Yd.	Water for Com- paction M. Gal.	Concrete in Culverts Cu. Yd.	Concrete in Struc- tures Cu. Yd.	Struc- tural Steel Fabri- cation Ton	Struc- tural Steel Erec- tion Ton
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	5.48	29.48	38.11	277.96	87.27

ANNUAL REPORT—1957-58**REPORT OF CHIEF ENGINEER, W. A. CLARKE, P.Eng.***Manager of Operations—H. W. Adcock, P.Eng.***CONSTRUCTION****Construction Engineer—H. A. TREGASKES, P.Eng.**

Construction during the fiscal year of 1957-58 was maintained at the high rate established in the previous year and, by the year's end, a record in expenditures was reached.

In addition to construction of many new bridges, and the reconstruction of various main and secondary highways in all parts of the Province, considerable work was accomplished on the construction of Hwy. 401, the Trans-Canada Highway, Burlington Bay Skyway and approaches, the Ottawa Queensway and new highway construction in the St. Lawrence Seaway area.

Construction started this year on the important Ottawa Queensway, proceeding from the Ottawa east city limits westerly to Hurdman's Bridge. This construction is being carried out under an agreement signed on March 19, 1957, between the Government of Canada, the Province of Ontario, the Federal District Commission, and the City of Ottawa, and will provide ultimately for a controlled-access highway through Ottawa approximately 10 miles long.

The more important work carried out in 1957-58 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford, Owen Sound Districts.

Construction of the Windsor entrance of Hwy. 401 was virtually completed by the end of the year.

Hwy. 401 from Eastwood to Hwy. 4 was opened to traffic on May 31, 1957, greatly relieving traffic conditions on Hwy. 2 from Woodstock through Ingersoll to London.

The rebuilding of Hwy. 5 from Paris to Howell's Corners was completed.

Reconstruction on Hwy. 7 from Sarnia easterly for approximately 15 miles continued favourably.

Reconstruction of Hwy. 22 from Hickory Corners to Lobo was started under the first contract awarded under the new pre-qualification of contractors system adopted by the Province.

The New Hamburg diversion on Hwy. 7 and Hwy. 8 was opened to traffic as a gravel road, thereby eliminating two railway crossings and enabling through traffic to by-pass two villages. This diversion will be paved during 1958.

In the Stratford District the rebuilding of Hwys. 7, 9, 21 and 86 continued, while in the Owen Sound District the most important work performed during the year was the reconstruction of Hwy. 6 in several locations between Guelph and Owen Sound.



The London-Ingersoll-Woodstock By-pass section of Highway 401, mapped above, was officially opened for traffic on May 31, 1957, by Hon. James N. Allan, Ontario Minister of Highways. Ceremonies were attended by representatives of Middlesex and Oxford County Councils, and the Councils of the Cities of London and Woodstock and the Town of Ingersoll. The by-pass extends from Eastwood, east of Woodstock, westerly for 38 miles to Highway 4, between Lambeth and St. Thomas.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts.

Work commenced on the construction of Hwy. 401 westerly from Hwy. 27 to Hwy. 25. Grading was completed to Hwy. 10 and considerable work had been done between Hwy. 10 and Hwy. 25 by the end of the year.

Widening of the Queen Elizabeth Way from four to six lanes between the Humber River and Hwy. 27 was begun, and approximately 50% completed during the year.

Other major improvements on this highway included construction of interchanges at Hwys. 2 and 25, the Mississauga Road, Geneva Street in St. Catharines, and at Beach Road, at Cawthra Road and Karr Street, thereby eliminating the need for traffic lights at these junctions. Work at Geneva Street and Hwy. 2 was completed by the end of the year.

Steel erection on the Burlington Bay Skyway was 95% completed this year, and some concrete deck was also constructed. Construction of the approaches continued.

Between Newcastle and Port Hope construction of Hwy. 401 was started, working easterly from the present end of Hwy. 401 near Newcastle. From Brighton east to the Trent River, good progress was made in the completion of grading of Hwy. 401, including the completion of the steel erection on the major Trent River Bridge at Trenton.

Four-lane construction was extended on Hwy. 6 from Mount Hope to Caledonia.

Rebuilding of Hwy. 10 from Orangeville southerly for 10 miles was commenced.

Trans-Canada Highway construction of Hwy. 7 in the vicinity of Lindsay was carried out, as was grading work on the Lindsay By-pass. Reconstruction on Hwy. 35 was continued both north and south of Lindsay.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts.

Granular Base and paving work commenced on Hwy. 401 from Trenton to east of Belleville covering a distance of approximately 25 miles.

The Kingston By-pass section of Hwy. 401 was opened to traffic with access from Hwy. 38 on the west and Hwy. 15 on the east. Grading work to the east of this point progressed favourably with completion of the section from east of Gananoque (junction of Hwy. 2) westerly for 10.4 miles.

Still farther east 11.1 miles of grading east of Brockville was completed, and grading commenced on the 7.8 miles section west of Brockville.

Reconstruction of Hwy. 7 to meet Trans-Canada standards continued westerly from Perth to Bathurst, and easterly from Perth to Drummond Centre.

In the St. Lawrence Seaway area, 30 miles of relocated Hwy. 2 and new Hwy. 401 were officially opened to traffic. Other sections of relocated Hwy. 2 between Aultsville and Iroquois were opened to traffic in the fall of 1957, with work continuing on the sections still to be completed. The grading portion of the reconstruction of Hwy. 29 from Brockville northerly for a distance of approximately 15 miles was completed during the year.



Kingston By-pass Section of Highway 401 was opened officially on Saturday, Nov. 2, 1957. Mrs. Elizabeth Sibbitt, widow of John S. Sibbitt, Warden of Frontenac County in 1923 and long a leader in the Ontario Good Roads Association, cut the ribbon which was held by Hon. James N. Allan, Minister of Highways, and Hon. Wm. M. Nickle, Minister of Planning and Development who is Kingston City Riding's member of the Legislative Assembly of Ontario. The Kingston By-pass extends for 9.28 miles between Highway 38, west, and Highway 15, east, north of the city limits. Including large traffic interchanges and a four-lane bridge over the Cataraqui River, the cost of the project was some \$6,000,000.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury, Sault Ste. Marie Districts

On the new T.C.H. Hwy. 103 from Port Severn to Footes Bay, grading was completed. Structure work at the Muskoka and Gibson Rivers proceeded favourably.

Grading of the Moon River revision on Hwy. 103 was commenced late in the year.

Important bridge work on relocated Hwy. 103 at Port Severn was started during the year.

The section from Waubaushene to Footes Bay will be paved during the summer of 1958. Farther north on T.C.H. Hwy. 69, from Nobel to Pointe-au-Baril, grading work was done and will be completed in 1958.

Grading and structure work on the Huntsville By-pass portion of Hwy. 11 was started. Completion is scheduled for early 1959.

The Hwy. 11 South Orillia By-pass was mostly completed. Work continued favourably on the interchange at the intersection of the South Orillia By-pass and the Hwy. 11 By-pass.

On Hwy. 17, immediately west of Mattawa, work was started to revise a steep grade. This revision will particularly benefit trucks and transports.

The mining and access road from the end of Secondary Hwy. 533 north of Mattawa to Hwy. 63 was finished by Department forces on behalf of the Mining & Access Roads Committee, and was opened to traffic. This will be assumed within the highway system as part of Secondary Hwy. 533.

Work on the mining and access road from Secondary Hwy. 616 to Foleyet continued by Department forces on behalf of the Mining and Access Roads Committee, and this road was opened for winter traffic. The construction of relocated Hwy. 11 from Matheson northerly to the vicinity of Monteith was continued, and this section will be paved in the summer of 1958.

Hwy. 112 from Hwy. 11 northerly to Hwy. 66 was entirely rebuilt.

Extension of Highway 101 to the Quebec Boundary was started this year.

In the Sudbury area, Hwy. 17 from the Falconbridge Road to Coneston and from Wanipetui easterly for 8 miles was improved. Work was finished on several sections of Secondary Hwy. 544 which services various mining areas.

The important Hwy. 108, formerly Secondary Hwy. 612, was paved. This highway serves the numerous mines in the Elliot Lake and Quirke Lake areas.

Reconstruction on the 17-mile section of the Trans-Canada Highway between Iron Bridge and Thessalon, and the Thessalon Diversion of Hwy. 17 commenced during the fall of 1957.

Grading of a new highway from Hwy. 129, 7 miles south of Chapleau, westerly to Hawk Junction, was started. This work covered a distance of approximately 10 miles.

North of Sault Ste. Marie work continued on T.C.H. Hwy. 17. Construction of the Montreal River Bridge was begun, and the grading from the Agawa River northerly was accelerated.

NORTHWESTERN AREA—Cochrane, Fort William, Kenora Districts.

The rebuilding of Hwy. 11 continued west of Cochrane in the vicinity of Hunta and Driftwood.

At Smooth Rock Falls on Hwy. 11 the new 777-foot bridge approached completion.

Farther west on Hwy. 11 paving continued satisfactorily. A hot mix base course was laid from Hearst westerly to connect with the previous year's paving at Pagwachuan River.

Construction on the mining and access road from Hwy. 11 to Hornepayne was continued by Department forces on behalf of the Mining and Access Roads Committee in the expectation that it will be completed by the summer of 1958.

On T.C.H. Hwy. 17 grading was started from Nipigon to Red Rock. Paving was completed from Red Rock to 10 miles south. New bridges in this section were commenced, and farther to the east on the Trans-Canada Highway, bridges over the Little Pic, Steel and Prairie Rivers were nearing completion.

Paving of Hwy. 120, Hwy. 17 to Atikokan continued, with only a single contract remaining to be called to complete paving work on this new highway.

A new access road from the Trans-Canada Highway to Heron Bay was opened to traffic.

Between Marathon and White River, construction of the Trans-Canada Highway continued at an accelerated rate. Grading was completed from Marathon to north of Hemlo, and from White River to White Lake Narrows.

Grading was also being done between White River and Wawa, and north from Agawa towards Wawa. All the clearing work in the remainder of the section was either completed or in progress.

To the west of Fort William on T.C.H. 17, construction of the new Kakabeka Falls bridge and approaches was in progress.

Paving work on Hwy. 17 from Sistonen's Corners southerly was mostly completed and paving from Shabaqua (junction of T.C.H. 17 and Hwy. 120) northerly for 7.5 miles was finished.

The Department, on behalf of the Mining and Access Roads Committee, continued construction of roads from Geraldton to Nakina and from Seagram to Caramet. These roads were opened to traffic, with remaining construction to be completed in 1958.

Construction was started on the causeway over Rainy Lake Narrows in the Fort Frances area. Reconstruction on Hwy. 71 was begun in the vicinity of Barwick and Pinewood.

Paving was completed on the Trans-Canada Highway from Oxdrift westerly for 13 miles. From the west end of the paving work grading was commenced for a further 10 miles.

There were, in addition, 15 miles of grading under way by the year's end east of Borup's Corners proceeding towards Ignace.

From the Manitoba Boundary easterly the first 6 miles of grading were completed, with a further 6 miles under construction.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1957-58

Hwy. No.	4 Lane Highways	Miles
401	Eastwood West to Highway 4.....	40.00
401	St. Lawrence Seaway Area	
	Iroquois to Aultsville.....	16.16
401	Kingston By-pass	
	(Hwy. 15 West to New Hwy. 38).....	7.23
	TOTAL.....	63.39
	2 Lane Highways	
2	Cornwall West to 6 miles West of Morrisburg.....	36.00
15	Ashton Station to Stittsville.....	8.00
38	Hwy. 2 to Hwy. 401 (Kingston By-pass).....	2.00
	TOTAL.....	46.00
	2 Lane Highways	
7	(Opened to Traffic as Gravelled Road — to be paved in 1958-59 Period) New Hamburg Diversion	5.00

SUMMARY OF NEW BRIDGES COMPLETED DURING FISCAL YEAR 1957-58

During Fiscal Year 1957-58 the number of new structures completed for traffic was

99

MAINTENANCE

Maintenance Engineer—C. TACKABERRY, P.Eng.

Bridges:

Detailed inspection on all bridges on Provincial Highways was continued. Parties alternated between field and the office, where the data is studied to determine load capacity. In older bridges it is common to discover some components with load capacity in excess of their designed requirements. Advantage of this condition is taken to raise all to the capacity of the stronger by reinforcement. An example is on the Winnipeg River Bridge on Highway 17 at Kenora. The girders alone required restricted loading. When reinforced the entire structure conformed to highway loading. Other examples are the C.N.R. Overhead on Highway 2 at Hamilton entrance; Saugeen River Bridge, Highway 4 at Priceville, and Harbour entrance on Highway 73 at Port Bruce.

Deck Replacement:

Puncturing and disintegration of concrete decks continues to require frequent replacement. Precast concrete deck slabs surfaced with asphalt have given a satisfactory deck with the advantage of minor traffic interruptions. Where weight is a consideration, pressed steel troughing capable of bearing a load between stringers has been used extensively. These are secured to the steel stringers by explosively driven pins, the trough being filled and surfaced with hot mix asphalt. For example, precast concrete deck slabs were used on bridges located on Highway 21 at Grand Bend on the Dredge cut, nine miles south, and Aux Raisins on Highway 2 near Lancaster. Steel trough with asphalt was employed on the swing bridge on Highway 11 at Huntsville, and Vermilion River Bridge on Secondary Highway 549. On Highway 2 at the Rouge River, the steel troughs were employed in a similar manner, but replaced wood forms for a poured in place concrete deck.

Silicone:

The Trent River Bridges on Highway 401 are carried on massive rollers. These were treated with silicone grease by our own forces.

All bridges on Highway 401 between Toronto and Newcastle were fully surface treated with silicone solution. Both chemical and water-soluble solutions have been employed and a record made for continued observation. Equipment for spraying, capable of being carried in a light covered truck, has been obtained and an operating crew has been trained to operate same.

Department-Owned Hot Mix Plant:

This plant operated on Highway 11, 29 miles west of Hearst, and produced 103,000 tons of H.L.4 asphalt paving material, which represented when laid on the highway a total of 72.2 miles of hot mix base course.

Zone Painting:

There was a considerable increase in the quantity of zone paint used this season owing to new pavement and the markings to aid in channelizing traffic at cloverleaves and intersections. On several of the more heavily travelled roads it was necessary to zone paint twice in the same year. Four new zone striping machines were built, bringing to a total sixteen of these machines now in use throughout the Province.

A new type of zone painting machine was built with dual controls to be used on 4-lane highways. The dual control system permits this machine to be operated in the passing lane, thereby permitting an uninterrupted flow of traffic in the driving lane, without the necessity of crossing over the painted line. This machine has been a great success and additional machines of this type are anticipated.

Signs:

Our changeover to the new standard type of signs is progressing according to plan. The old black and white signs are giving way to green and white for direction signs; yellow and black for warning signs, and red for "stop" signs.

Where large volumes of traffic are directed to two or more routes, overhead signs, which span the highway, are being erected. The first of this type was erected on Highway 401 and Highway 2 in the vicinity of the Lansing Road.

Electrical:

Eighteen (18) new traffic signals were installed during the year. Illumination of the following intersections was completed:

Highways 2 and 115	West of Newcastle
Highways 115 and 35	Pontypool
Highways 2 and 38	West of Kingston
Highways 5 and 24	Howell's Corners
Highways 5 and 24	Osborne's Corners
Highways 11 and 69	Washago
Highway 401	Entrance to Thousand Islands Bridge
Highway 11	Nipissing Junction
Highways 2 and 53	Eastwood
Highway 401 and Weston Rd.	
Q.E.W. and Highway 122	
Humber Bridge and Westbound lane of Q.E.W. from Humber Bridge to C.N.R. Overpass.	

An overhead lane control system, the first of its type erected in Canada, was placed in operation at the Homer Bridge on the Queen Elizabeth Way over the Welland Canal. This system extends over 3,000 feet on either side of the canal and has eliminated to a large extent the congestion which existed at the approaches to this bridge, prior to the installation of this system.

Forestry:

The hydraulic seeding mulch blower method of seeding slopes throughout the various Districts to eliminate erosion, is becoming more popular and is being used extensively. We now have twelve mulchers and seven hydra seeders in use throughout the Province.

Salt Sheds:

Twenty-two (22) salt sheds were completed during the past season, the majority of which were designed to hold 200 tons of bulk salt. We are continuing to erect these buildings as this results in a considerable annual saving on our salt purchases, as bulk salt can be purchased at less cost than bag salt.

Weigh Scales:

The installation of axle weighing scales, according to our policy inaugurated in 1955-56, is being continued and the scales have proven most effective.

TABLE SHOWING TOTALS OF WORK DONE, 1957-58

Class of Work	No.	Tons	Miles
Automatic signals at railway crossings this year.....	30		
Bituminous hot mix pavement.....		1,793,876	667
Bituminous mulch and cold mix.....		158,009	102
Bituminous prime on gravel roads.....Gals.	2,993,985		1,106
Bituminous resurfacing, old pavement.....		272,591	253
Bituminous surface treatment.....Gals.	972,274		389
Bridges built.....	99		
Bridges painted.....	32		
Calcium dust layer, gravel roads.....		7,831	2,209
Calcium for de-icing roads.....		161	143
Concrete pavement.....			5
Crushed gravel and stone (by contract).....		4,684,841	1,957
Crushed gravel and stone (by Dept. forces).....		833,734	738
Grading and culverts.....			561
Granular base on new grading.....		9,178,685	738
Granular base on old grading.....		2,714,279	1,035
New buildings erected this year.....	82		
Off-road parks maintained.....	58		
Roads snowplowed and kept open (King's Hwys.).....			9,272
Roads snowplowed and kept open (Secondary Hwys.).....			2,401
Roadside picnic places maintained.....	1,261		
Routine maintenance (King's Hwys.).....			9,272
Routine maintenance (Secondary Hwys.).....			2,479
Salt for de-icing roads (raw).....		100,929	
Sand in stock piles.....		33,426	
Sand for winter maintenance.....		614,560	
Scale houses maintained.....	34		
Seeding by Department forces.....Sq. Yds.	18,871,820		
Shrubs received and planted.....	116,602		
Signs newly erected or replaced.....	64,936		
Snow hedges planted this year.....			32
Snow fence, erected, dismantled, stored.....			1,212
Traffic lights installed this year.....	21		
Weed control.....			6,832
Zone painting (King's Hwys.).....Gals.	107,491		9,595
Zone painting (Secondary Hwys.).....Gals.	4,914		349

SUMMARY OF CONTRACT WORK FOR 1957-58

Contract Control Engineer—T. C. MUIR, P.Eng.

Type of Work	Construction	Maintenance	Total
Bridge Painting.....		1	1
Clearing.....			
Concrete Paving.....	1		1
Crushed Gravel.....	8	76	84
Grading and Culverts.....	87		87
Hot Mix Patching.....		11	11
Hot Mix Paving.....	24	3	27
Prime Dust Layer.....		10	10
Resurfacing.....	1	9	10
Screened Sand.....		8	8
Structures.....	94		94
Structural Steel.....	31		31
Surface Treatment.....		8	8
Winter Sanding.....		21	21
TOTALS.....	246	147	393

MATERIALS AND RESEARCH SECTION

F. C. BROWNRIDGE, *Materials and Research Engineer*

The activities of the Section reflected the type and volume of the work undertaken by the Department. More time was spent on pre-engineering aspects, and an increase in the number of engineering personnel assigned to the supervision of concrete construction permitted much closer control of this operation and the institution of several projects allied to concrete construction.

The increased space allotted to the Section in the new building, and the replacement of some manual operations by mechanized equipment, permitted the commencement of additional investigational projects but these were limited in scope by the lack of adequately trained staff. An experienced Research Engineer, with a capable staff, remains the prime prerequisite for a research programme.

Information on the latest developments in highway construction and materials was obtained by the attendance of Section personnel at the technical sessions of the major engineering societies and associations and by liaison with Canadian and American highway departments. A paper entitled "The Importance of Percent Crushed in Coarse Aggregates as Applied to Bituminous Pavements," the result of an investigation to establish this criteria, was presented at a technical session of the Association of Asphalt Paving Technologists held in Montreal. Membership on the Advisory Council of the Ontario Joint Highway Research Committee was continued.

The volume of department work limited the assistance that could be extended to the municipalities to a relatively low level.

Soils Subsection

An increased, adequately trained, staff remained the prime requirement of the subsection. Pre-engineering again received priority to meet the demands and schedule dates established by our Planning and Design Branch. Complete soil reports, with recommended grade lines and granular requirements, were prepared for 139 projects totalling 807 miles. In addition, 407 miles of subgrade reconnaissance, 216 miles of pedological surveys and 936 miles of performance surveys were completed.

As an aid in construction, power equipment was used in the investigation of 420 earth borrow pit and acceptance testing of all materials was continued, but technical assistance during construction was generally limited. However, the beneficial effects of the courses, held annually for district personnel, was noted and the assumption of compaction control by district inspectors was extended to include all the southern districts and Huntsville in the North. A summary of all the compaction checks reported to the Laboratory indicated that increased control was producing improved results but that additional effort would be required to meet the Department's specified compaction requirements.

The use of seismic and resistivity equipment was investigated to establish the application of geophysical methods to highway design. The work undertaken was of an exploratory nature only, but further use of this equipment in future work is being investigated.

Our inability to secure adequately trained personnel did not permit the expected expansion in the volume of work performed by our Foundation Group and, consequently, a large volume of the investigations undertaken were conducted by private firms. Two crews with power equipment were employed throughout the year and 57 sites were investigated. The projects undertaken involved 3,846 lineal feet of drilling, 240 feet of which was in bed-rock.

Materials Subsection

Two crews, with power equipment, were engaged in granular pre-engineering investigations and 330 sources were examined to establish the availability and suitability of materials for the type of construction to be recommended. Pre-contract information involved the preparation and publication of 135 strip maps, listing locations and preliminary data for all known local granular materials sources, for use by the interested contractors. Our granular inventory was revised, on the basis of current information, and extended to include the new deposits investigated.

Considerable time was spent in the examination and sampling of commercial aggregate sources to ensure quality control and to assist the suppliers in meeting Department specifications.

Two additional engineers, together with the supervisory inspectors, provided materials control and technical assistance on 110 bituminous paving contracts. Laboratory design mixes were prepared for 71 hot-mix contracts, and 162 plant checks were performed to maintain field control. In addition, 3 mulch mix designs were prepared for our Motopaver utilizing the criteria established by previous investigational studies.

The addition of 4 experienced engineers to the staff permitted the desired increase in the volume of concrete quality control that could be undertaken by section personnel. Our concrete engineers and supervisory inspectors provided technical assistance on 125 projects for which 110 concrete mixes were designed in the laboratory. Close control of the 42,000 square yards of high early strength concrete, used in widening the Queen Elizabeth Highway between No. 27 and the Humber Interchange, was maintained. On this project the traffic volume restricted construction to night operations when near freezing temperatures were a hazard. The use of polyethylene sheeting, placed immediately following the finishing operation, gave very satisfactory results.

Several projects listed below for the evaluation of concrete materials and construction methods were instituted:

1. *Concrete Durability*: A programme which will take two years to complete has been in operation since August, 1957, which makes use of an automatic freezing and thawing chamber to simulate within the laboratory something of the conditions to which concrete may be subject under winter climate. Specimens of the concrete under test are subjected to eight cycles of alternate freezing and thawing each 24 hours with the tests being carried through until either the concrete disintegrates or 312 cycles are completed. By comparing the expansion of various specimens and the loss of weight it is possible to draw conclusions about the effect of various factors on the durability of concrete. The intended programme is to examine the effect of various admixtures, principally those which entrain air; the type of coarse aggregate, in particular those of a cherty or shaley nature; and fine aggregates or sand. Work on admixtures is well advanced and the Department has been able to enlarge its list of approved materials. This list is under annual review as further products are evaluated.

It is hoped that as results from tests such as this are evaluated against performance that one day freeze-thaw tests will take their place within the Department's standard tests for materials.

2. *Alkali-Aggregate Reaction*: The extensive investigation which has been made in both the field and laboratory has confirmed the existence of a problem of concrete disintegration and expansion caused by the reaction of *some* limestone of the Black River Formation when used as a coarse aggregate in concrete with cements containing more than 0.6% of total alkali constituents.

By making specimens in the laboratory using the suspected materials, similar expansions and cracking to those found in the field have been observed and measured.

It has been shown that if a low alkali cement is used the reaction is limited to acceptable amounts and satisfactory concrete can be made with the reactive limestone. This will be of great help in areas where alternative aggregates are not available.

3. *Winter Concreting*: In conjunction with the Bridge Office a project to evaluate methods of protecting concrete during winter construction was instituted. Compared with the standard method of enclosing the structure and heating the enclosure with steam systems of using insulated forms have been tried in the field and temperatures recorded within the concrete. The results appear promising and work is being continued in the laboratory cold rooms to evaluate various insulating materials under controlled conditions.

Chemical Subsection

The functions of this Subsection include not only the control of the materials assigned but the extension of technical assistance to the other Subsections. The value of the service performed is indicated by the constantly increasing volume and variety of the work required.

Control of the various paints purchased remains the major duty of the Subsection. Pre-purchase evaluation of zone paints involved detailed in-service evaluation as well as complete laboratory analysis of the 27 paints proposed for supply to the Department, for zone marking, in the fiscal year 1958-9. Control of the zone painting materials purchased necessitated the testing of 150 paint samples and 66 samples of glass beads.

Quality control of guide rail paints was maintained by the evaluation of 47 samples. Exterior exposure studies have been instituted for correlation with the accelerated weathering data obtained by weatherometer testing.

Bridge primers and bridge paints are under test and some minor difficulties encountered with the M-50 pigmented primer are under study. Primers purchased under a revised specification for red lead type have given satisfactory results.

Testing of fire retardant paints and the evaluation of paint thinners and paint removers has been instituted.

Compliance with specification requirements was determined for 325 samples of crushed rock salt, 30 samples of subgrade papers, 14 samples of herbicides and 6 samples of antifreeze.

Assistance to other subsections involved the chemical analysis of 65 cement samples, organic content determinations for 35 samples of soil and the testing of 29 samples of water proposed for use in concrete.

Projects to evaluate the use of polyethylene, as a subgrade moisture barrier material, and the use of "Banox," as an additive to decrease the corrosive properties of salt when used as an ice control chemical, are nearing completion.

Routine Laboratory

It is evident that the volume and type of service demanded of any routine laboratory should reflect the construction programme. The fiscal year 1957-8 saw a reduction in the mileage of bituminous pavement constructed with an increase in the number of grading and granular base course contracts in progress. Acceptance testing and contract control of grading and granular base course construction necessitated the analysis of 3,716 samples as compared with the previous year's total of 2,828 for this operation, or an increase of approximately 30 per cent.

Although the mileage of bituminous pavement constructed showed a decrease, increased control maintained the volume of testing at relatively the same level of approximately 2,700 samples of granular materials. However, this reduction was indicated by a 25 per cent reduction in the number of pavement samples submitted for extraction testing. Complete analyses were performed on 2,977 samples of bituminous materials to ensure control of these products.

Concrete construction paralleled the previous year's volume and necessitated the analysis of 622 samples of aggregate. Quality control of concrete construction involved the testing of 6,968 field cast specimens, an increase of almost 90 per cent compared to the previous year. Our Cement Laboratory, with the assistance of the Chemical Laboratory, performed complete tests on 777 samples representing all cement shipments to Department projects from all suppliers.

The control of materials from commercial sources and co-operation with these suppliers in the maintenance of quality control was expanded and involved an increase of 140 per cent in the number of samples tested. Assistance to the private testing laboratories was continued by the performance of those standard Department tests which they were unequipped to undertake.

The London laboratory, serving the southwestern portion of the province, experienced an increase of about 15 per cent in the volume of samples tested. However, the emphasis was again on soil and granular base course testing with a substantial reduction in the analysis of bituminous paving materials.

An area laboratory, to service the northwestern portion of the province, was established in Fort William and opened in August. Due to the late opening, and the early cessation of construction activities in the area, the volume of samples handled was small. It was indicated, however, that it will be of material assistance to our construction forces in the district.

The Belle River laboratory was again operative for the control of the concrete pavement construction in the area until its completion in November.

The testing of miscellaneous materials for our districts and purchasing section was continued. The necessity for control of the metal products is becoming more pronounced and a metallurgist was added to the staff in late November.

Research and Technical

No engineer, with sufficient qualifications to head our Research Group, has yet been obtained. Consequently, no major research projects were undertaken. However, a number of special investigations, to improve testing and construction operations, were instituted.

(a) *Slurry Seal*: All available data on the effectiveness of a slurry seal on ravelled bituminous pavements were perused. A section of three miles in the vicinity of Longlac was treated in this manner and the evidence to date indicates that the treatment will serve the intended purpose. The section will be kept under close observation to establish the durability of the treatment.

(b) *Coarse Aggregate Characteristics*: Laboratory studies were commenced to determine the characteristics of materials from the more generally used commercial sources with respect to hot-mix paving.

(c) *Pneumatic-tired Rollers*: The work begun in 1956, to evaluate the use of pneumatic-tired rollers in the compaction of bituminous pavements, was concluded. The final report on this study is nearing completion.

(d) *Fine Aggregate Gradation*: The project to evaluate variations in fine aggregate gradations, as related to bituminous pavements, was continued and an allied study to re-evaluate our specification limitation for pass No. 4 sieve material in coarse aggregate was completed, and a report is being prepared.

(e) *Particle Shape of Fine Aggregate*: The laboratory work to establish the effect of particle shape on the stability of bituminous pavements was completed and a report is to be prepared.

(f) *Hot-mix Temperatures*: The programme to evaluate the effect of temperature variation as related to compaction properties, is nearing completion.

(g) *Commercial Sources*: The project to evaluate new commercial sources of HL-3 aggregate is continuing.

(h) *Mulch*: A considerable amount of work was performed on mulch and valuable information for future investigation was obtained.

(i) *Slag*: Some preliminary studies were commenced to establish the value of slag screenings as related to bituminous paving.

(j) *Soil Stabilization*: Post-war expansion and changes in design methods to meet the demands of increased traffic volume and loads is depleting our sources of granular materials at a very rapid rate. While the incidence is still mainly restricted to the more densely populated areas and is local in character consideration must shortly be given to means for conservation of these resources if depletion is to be forestalled. For this purpose, a project to evaluate the economics of soil stabilization as a substitute for granular base was established. Typical soil types have been secured, from areas offering the best potential use for soil stabilization, and a complete laboratory testing programme has been instituted. The work to date has been restricted to soil-cement stabilization but it has indicated that this type of construction is economically feasible and additional investigation is warranted.

(k) *Frost Heaving*: The field investigations begun last year were continued. The power drilling equipment was modified as the result of last year's experience and satisfactory cores of the frozen materials were obtained. Complete field information was obtained for the additional 22 frost heave locations examined and the necessary samples were obtained for laboratory analyses and investigations. It is anticipated that the degree of frost susceptibility can be established by rapid laboratory test methods but that any such laboratory criterion must be correlated with field performance. Further work will be required before sufficient information for final analyses can be obtained.

(l) *Grouting*: The increased use of prestressed concrete has necessitated experimental work into suitable types of grout, for prestressed concrete beam cable ducts, particularly for use under winter conditions.

(m) *Miscellaneous Concrete Problems*: Projects have been set up to evaluate concrete curing methods, the use of silicones as an anti-scaling agent, and allied problems of concrete deterioration.

Courses of Instruction

As part of the established programme for Engineers-in-training, five members were assigned to the Materials and Research Section for the period December 8th to April 25th. The schedule covered all phases of laboratory testing, attendance at the courses provided for our own and District personnel, and such field activities as the season selected would permit.

The following courses, held by the Section on an annual basis to aid in the training of District personnel, were presented. The attendance at each is shown in brackets.

58-201 — Soil Inspectors (34) — For personnel not previously engaged in grading inspection. The elements of soil identification and classification were covered, with emphasis on field compaction control.

58-202 — Advanced Soil Inspectors (26) — For personnel who had attended a previous Beginners' Soil Inspectors' course and had been engaged in soil inspection. A more advanced coverage of the principles of soil inspection and the duties of the Soil Inspector with discussion periods for field problems and construction methods.

58-203 — Advanced Asphalt Inspectors (31) — This course was restricted to those District inspectors who had previously received preliminary tuition and who had limited field experience on bituminous paving projects.

Through the very generous co-operation of several equipment manufacturers and distributors, this course comprised a very thorough review of the major units of construction equipment found in the bituminous paving industry. Detailed descriptions and literature brochures were presented to each candidate during the course.

Many problems associated with equipment calibration, and operation, and material handling were discussed and solved.

58-204 — Asphalt Inspectors (34) — Designed for personnel not previously engaged in bituminous inspection, the course presented an intensive coverage of the duties and responsibilities of an asphalt inspector with discussions on materials control and demonstrations of testing methods and explanations of their significance.

58-205 — Structural Concrete Inspectors (52) — Primarily for new inspectors, all aspects of mixed design, concrete production and control and structure construction were presented.

58-206 — Project Supervisors (40) — An advanced general course, restricted to project supervisors, in which all aspects of quality control and construction methods relating to soils, concrete, and bituminous paving were reviewed with discussion periods for field construction problems.

Specifications:

Materials specifications were prepared or revised for the following:

1. Chain-link fencing.
2. Catch Basin Frames and Gratings.
3. Steel Beam Guide Rail.
4. Subgrade Paper.

In addition, an investigation was undertaken to establish the suitability of the wire rope now being purchased for use as guide rail.

The first stage of the investigation, being carried out by the Physical Metallurgy Division of the Federal Government, to establish the properties of snow plow shoe materials, was concluded. The second and final stage was programmed and was carried out by the maintenance staff of the Ottawa District under the supervision of personnel from the Physical Metallurgy Division. Snow conditions were not optimum for completion of the project, but it is hoped that statistical analyses of the data obtained will permit selection of the most suitable and economical material.

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA-QUEENSWAY, 1957-58

Asst. Construction Engineer—ROSS E. CLARKE, P.Eng.

Trans-Canada Highway construction continued this year at an accelerated rate over any previous years.

In the vicinity of Ottawa, work was started on the Trans-Canada Highway east approach to the Ottawa Queensway.

The Ottawa Queensway will be constructed under an agreement, dated March 19, 1957, signed between the Government of Canada, the Government of the Province of Ontario, the Federal District Commission, and the Corporation of the City of Ottawa. This agreement, setting forth the extent of participation of the four parties concerned, also states that the route, plans and specifications will conform with the report dated July, 1955, as prepared by the consultant engaged for this purpose by the Province of Ontario.

Construction of the first section, which section is between the east limits of Ottawa and Hurdman's bridge, is now in progress with the construction of bridges at Alta Vista Drive, St. Laurent Blvd., and the Tremblay Road. The balance of the route, including the west approach of Trans-Canada Highway to the Queensway, is being planned and designed, and scheduling for construction is in progress.

On Highway 7 reconstruction to Trans-Canada Highway standards continues at Perth east and west and at Sharbot Lake westerly.

Construction of Trans-Canada Highway By-passes were commenced on Highway 7, at Lindsay and Peterborough, and the grading of Orillia Highway 12 By-pass was completed.

On Highway 103 on the new section between Port Severn and Footes Bay the grading and the bridges at the Gibson River and Muskoka River were completed. After extensive soil testing and investigation at the Moon River crossing it was decided to relocate the approaches. A contract will be called for this bridge at a new location which will include 1.3 miles of approaches. This will allow hot mix paving to be completed from Waubauskene through to Footes Bay intersection of Highways (Section 69 and 103), since the C.N.R. underpass has been completed by that railway.

Construction of the relocated Trans-Canada Highway 69 was started from Nobel towards the Magnetawan River. From that point northerly to Sudbury construction has been completed except for final hot mix paving yet to be done between the Magnetawan River and the French River, which section at present has a mulch pavement surface.

On Highway 17 reconstruction to Trans-Canada Highway standards was commenced between Iron Bridge and Thessalon. In this area work was started on the Thessalon By-pass including the C.P.R. overhead and the Thessalon River bridge. Work was begun on bridges at the Aux Sauble and Montreal Rivers which are located respectively east and north of Sault Ste. Marie.

In the new section of Highway 17 from Agawa River to Marathon, good progress was made with access now possible from Agawa River to 13 miles north, and from Marathon to Hemlo. The new road was also largely completed for a distance of 10 miles east and 10 miles west of White River. In this new section, from the Agawa River to Marathon, the Federal Government, under the new Trans-Canada Highway Agreement signed July, 1956, is assuming 90% of the Trans-Canada Highway construction costs accruing after July, 1956.

Between Marathon and Jackfish Lake work on the major structure over the Little Pic, and on structures over the Steel River and the Prairie River continued. With the completion of these bridges this entire section will have been built to meet Trans-Canada Highway standards.

Relocation of Highway 17 at the Kaministiquia River crossing has necessitated the building of a new bridge together with approaches thereto. This construction was begun during the year and is being continued to co-ordinate with the development of a large Provincial park at Kakabeka Falls.

Completion to Trans-Canada Highway standards including the Sistonen's Corners C.N.R. overhead has now been accomplished between Kakabeka Falls and 7 miles north of Shabaqua Corners (Jct. Hwy. 120 to Atikokan).

Grading contracts were awarded on Highway 17 from 1.5 miles east of Borup's Corners east for 15 miles. Grading contracts were also awarded for the section 5 miles east of Vermillion Bay (Jct. Hwy. 105) to 5 miles west. This section is a continuation from the east of the paving to Trans-Canada Highway standards of that portion completed this year from Oxdrift westerly.

From the Manitoba Boundary easterly for 6 miles, grading was completed to connect with the completed Manitoba Trans-Canada Highway at the boundary. Paving of this grading will be completed by the summer of 1958 with further work scheduled to proceed towards Kenora eastward.

The total work completed to the end of the year was:

Grading and Culverts.....	604.69 miles
Bituminous Hot Mix Pavement.....	438.34 miles
Permanent Bridges and Structures built.....	44

Grading and Culverts

District	Hwy. T.C.H.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	17	Ottawa East (Montreal Rd. Interchange)..	0.50	.....	0.50
	15	From Perth to Drummond.....	7.50	.....	2.55
Kingston	7	From Hwy. 38 to 7.1 miles West.....	7.10	1.10	6.00
	7	From Perth to Bathurst.....	6.90	.....	5.10
Port Hope	7	From Oakwood to 2 miles West of Lindsay.	5.26	.....	5.26
Toronto	12	Orillia By-pass.....	3.30	1.65	1.65
	103	Waubashene to Pt. Severn.....	4.70	3.00	1.70
Huntsville	69	Nobel to Shawanaga.....	9.90	.....	5.00
	69	1.5 mi. South of Shawanaga River to 1.5 mi. North of Pointe-au-Baril.....	8.50	.....	4.50
	103	3 Structures at Pt. Severn.....	1.00	.....	0.50
	103	Moon River Revision.....	1.30	.....	0.80
	103	MacDonald River to Muskoka River.....	6.60	5.60	1.00
Proj. 56-1 (White River)	17	10 mi. E. of Marathon to 21.8 mi. E. of Marathon.....	11.80	.....	11.80
	17	21.8 mi. E. of Marathon to 33.8 mi. E. of Marathon.....	12.00	.....	3.00
	17	33.8 mi. E. of Marathon to 10.6 mi. W. of White River.....	11.40	.....	11.40
	17	10.6 mi. W. of White River to White River.	10.60	2.90	7.70
	17	White River to 8.4 mi. E. of White River....	8.40	2.80	5.60
	17	From 8.4 mi. E. of White River to 18.4 mi. E. of White River.....	10.00	.....	4.00
	17	Wawa Road to Catfish Lake.....	10.00	.....	6.00
	17	Agawa River to Barrett River.....	5.00	.....	5.00
	17	Barrett River N'ly.....	10.00	.....	8.00
Fort William	17	From Shabaqua Corners to 7 mi. N.....	7.00	6.60	0.40
	17	From Sistonen's Corners to 5 mi. South.....	5.00	3.60	1.40
	17	From Red Rock to 5 mi. W.....	5.00	4.80	0.20
	17	From 5 mi. W. of Red Rock to 10 mi. W. of Red Rock.....	5.00	3.50	1.50
	17	From Marathon to 10 mi. E.....	10.00	8.70	1.30
	17	From 6 mi. E. of Nipigon to 3 mi. E. of Rossport.....	0.75	.....	0.75
	17	From Red Rock Corners to Nipigon.....	6.72	.....	1.50
	17	From Kakabeka Crossing of the Kaminis- tiquia R. to Hydro Aqueduct Crossing..	1.00	.....	1.00
	17	Pic River — 5 mi. E. of Marathon.....	0.76	.....	0.60
Kenora	17	From Manitoba Boundary to 6.1 mi. E....	6.10	2.60	3.50
	17	From 6.5 mi. W. of Oxdrift to 13.5 mi. W. of Oxdrift.....	7.00	4.50	2.50
	17	From 7.8 mi. E. of Borup's Corners to 16.3 mi. E. of Borup's Corners.....	8.50	.....	3.00
TOTALS			214.59	51.35	114.71

Granular Base (New Grading)

District	Hwy. T.C.H.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	From Perth to Drummond Centre.....	7.50	.....	1.35
	17	Ottawa East (Montreal Rd. Inter.).....	0.50	.....	0.50
Kingston	7	From Hwy. 38 to 7.1 mi. W.....	7.10	.....	7.10
Port Hope	7	Oakwood to 2 mi. W. of Lindsay.....	3.54	.....	3.54
	7	From Jct. of Hwys. 7 & 35 to 2 mi. W. of Lindsay.....	5.26	.....	5.26
Project 56-1 (White River)	17	From 10 mi. E. of Marathon to 21.8 mi. E. of Marathon.....	11.80	.....	4.20
	17	From 21.8 mi. E. of Marathon to 33.8 mi. E. of Marathon.....	12.00	.....	3.00
	17	From 33.8 mi. E. of Marathon to 10.6 mi. W. of White River.....	11.40	.....	9.20
	17	From 10.6 mi. W. of White River to White River.....	10.60	.....	10.60
	17	From White River to 8.4 mi. E. of White River.....	8.40	.....	7.00
Fort William	17	From Shabaqua to 7 mi. N.....	7.00	5.00	2.00
	17	From Sistonon's Corners to 5 mi. S.....	5.00	3.70	1.30
	17	From Red Rock to 5 mi. W.....	5.00	4.80	0.20
	17	From 5 mi. W. of Red Rock to 10 mi. W.....	5.00	3.50	1.50
	17	From Marathon to 10 mi. E.....	10.00	4.30	5.70
	17	From Kakabeka, Kam. River Crossing to Hydro Aqueduct Crossing.....	1.00	1.00	0.80
Kenora	17	From Manitoba Boundary to 6.1 mi. E.....	6.10	1.60	4.50
	17	From 6.5 mi. W. of Oxdrift to 13.5 mi. W. of Oxdrift.....	7.00	5.00	2.00
	17	From Oxdrift to 13.5 mi. W.....	13.50	.....	13.50
		TOTALS.....	137.70	28.90	83.25

Bituminous Hot Mix Paving

Sudbury	17	From Nairn Overhead to Spanish River....	4.33	.....	4.33
Fort William	17	From Red Rock Corners to 10 mi. S.....	10.00	.....	10.00
	17	From Shabaqua Corners to 7.59 mi. N.....	7.59	.....	7.59
	17	From Sistonon's Corners to 5.10 mi. S.....	5.10	.....	4.60
Kenora	17	Oxdrift West.....	13.00	.....	13.00
		TOTALS.....	40.02	.....	39.52

New Bridges

Ottawa	15	Ashton Overhead over C.P.R.			
Port Hope	7	Lindsay By-pass			
	7	Lindsay By-pass C.N.R. Overhead			
Huntsville	12	South Orillia Underpass (Jct. Hwy. 11 By-pass and Hwy. 12 By-pass)			
	103	Matchedash Bay Bridge			
	103	C.N.R. Overhead — Waubaushene			
	103	Muskoka River Bridge			
	103	Gibson River Bridge			
Sault Ste. Marie	17	Birch Creek Bridge			
Fort William	17	Sistonon's Overhead C.N.R.			
Kenora	17	Beaver Creek Bridge			

Total of 11 New Bridges

MINING AND ACCESS ROADS REPORT, 1957-58**ROSS E. CLARKE, P.Eng., Secretary*****Mining and Access Roads Committee (Interdepartmental)***

The fund for the Mining and Access Road work was voted in the Department of Mines estimates, and this fund was administered by a Committee consisting of the Minister, Department of Public Works; Minister, Department of Highways; Minister, Lands and Forests, and Minister, Department of Mines.

As in the previous year, the construction of Access Roads to certain communities was continued and the cost was financed entirely by the Province. This Access Road construction was done by both Department of Highways forces and by contract.

The construction of roads to serve mining interests was continued, the cost of this work, as in previous years, being financed partially by the Province, the balance financed by the particular mining interests benefited. The Department of Highways was involved only in a general supervisory capacity on behalf of the Department of Mines.

The more important highlights of this work were as follows:

North Bay District:*Secondary Highway 533 to Highway 63*

On the weekend of July 1, 1957, the torrential downpour which accompanied Hurricane Audrey resulted in erosions which required extensive repairs.

Temagami Mine Company Road

This road was completed by the Temagami Mine Company this year under the contract awarded by them and supervised by consulting engineers, with general supervision and inspection by District 13 on behalf of the Department of Mines.

New Liskeard District:*Foleyet to Secondary Highway 616*

Work on the remaining five miles was resumed early in the spring and the road was completed for traffic July 26, 1957. Further filling and gravelling of swampy sections will be required in 1958-59. These swamps were originally corduroyed with brush and require additional fill.

Cochrane District:*Highway 11 to Hornepayne*

Work proceeded at the south end of the road and approximately 7 miles were completed. Many rock outcrops were encountered, difficulties which necessitated relocation in a number of instances. Progress was further hampered by the lack of suitable granular material.

On the north end of this road, approximately 2 miles were constructed in the spring of 1957. During November the Department's Asphalt Plant organization commenced work and, although hampered by an exceptionally mild winter, made excellent progress. Construction was expedited by the discovery of large quantities of granular material along the route.

The first vehicle made the trip into Hornepayne on March 29, 1958. It is anticipated that the entire road will be open to general traffic by the summer of 1958.

Fort William District:

Highway 11 to Caramat

This road was opened to traffic around September 23, 1957, a result achieved by connecting the section built from the Caramat end this year to the section built from the Seagram end last year.

Geraldton to Nakina

This road was opened to traffic around September 1, 1957. Short sections of the road were barely passable as a very low standard road had been rushed through to gain access to gravel at Mileage 23 north of Geraldton. After this gravel was reached, an amount was placed on the low standard section sufficient to carry traffic during the fall and the following spring.

The 10 miles constructed under Contracts 56-140 and 56-152 were in excellent condition for travel by September 1, 1957, as they were constructed almost entirely with gravel from pits located on the contracts.

Highway 120 to Nym Lake, Highway 120 to Burchell Lake, and Savant to Sturgeon Lake

These roads were improved by the application of gravel.

Highway 120 to French Lake

This road, 0.5 miles in length, was paved to a width of 18 feet this year. 1.15 miles of French Lake Park roads were paved; 0.9 miles to a width of 12 feet and 0.25 miles to a width of 18 feet. The cost of the French Lake Park roads was recoverable from the Department of Lands and Forests.

Kenora District:

Sioux Lookout to Alcona

A site for the Sturgeon River bridge was investigated further during the fiscal year but because of physical difficulties and prohibitive costs no additional work was done. At the present time the road dead ends at the Sturgeon River opposite Superior Junction.

Mining and Access Roads, 1957-58

Financed Entirely by the Province

District	Location	Year Begun	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1957-58	Miles to Compl.
North Bay	From Sec. Hwy. 533 (Mattawa) to Hwy. 63 (Timiskaming).....	1955	24.0	18.0	6.0	.....
New Liskeard	From Sec. Hwy. 616 to north limit of Foleyet..	1955	12.0	7.0	5.0	.....
Cochrane	From Hwy. 11 to Hornepayne.....	1955	43.0	6.5	23.5	13.0
Fort William	From Geraldton to Nakina.....	1954	43.0	14.0	14.8	14.2
	From Hwy. 11 to Caramat.....	1955	20.0	8.7	7.3	4.0
Kenora	From Sioux Lookout to Alcona.....	1955	5.8	5.8	Further Sturgeon River Bridge Site Investigation carried out, 1957-58.	
TOTALS.....			147.8	60.0	56.6	31.2

Financed Partially by the Province

North Bay	From Hwy. 11 (Temagami) to Sulphide Point.....	1956	10.9	5.9	5.0	.....
TOTALS.....			10.9	5.9	5.0	.....

DISTRICT No. 1—CHATHAM**G. U. HOWELL, District Engineer****Construction**

The fall of this year saw the completion of the paving on Hwy. 401 into Windsor. The paving is now completed from the junction of Hwy. 2, west of Tilbury to the junction of Hwy. 3 and the junction of Hwy. 3B in the vicinity of Windsor. Since the lateness of the season prevented the shoulders from being completed the road was not opened to traffic.

The underpass and cloverleaf at the Comber Side Road on Hwy. 401 was also opened to traffic. A new bridge over the Sydenham River on Hwy. 79 was completed and opened to traffic. An overpass over Colbourne Road on Hwy. 402 in the city of Sarnia was also completed and opened to traffic. Hwy. 7 from the junction of Hwy. 21 going into Forest to Perch Creek was graded and widened into a 3-lane pavement. This necessitated the widening of the bridge at Pulse Creek.

Maintenance

Two storage buildings were constructed for storage of bulk salt for ice control. One weigh scale was constructed on Hwy. 2, west of Chatham. One 3-ton electrical maintenance truck with aerial ladder and one road sweeper were received as new equipment and worked very satisfactorily.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58
401	Walker Road to Hwy's. 3 and 3B.....	3.50	1955	0.50
21	Forest to Jct. 7 and 82.....	11.17	1956	11.17
402	Colbourne Road Overpass.....	.40	1956	.40
79	Sydenham River Bridge.....	.50	1956	.50
7	1 mi. west Forest Road west.....	8.20	1956	8.20
7	Perch Creek (Jct. 7 and 402) east.....	7.66	1956	7.66
2, 98	Channelization, Jct. 2 and 98.....	.97	1956	.97
402	Hwy. 98 to Hwys. 3 and 3B.....	4.93	1957	4.93
TOTALS.....		37.33		34.33

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
401	Comber Side Road Cloverleaf.....	1.10	1955	1.10	31,091
401	Hwy. 98 to Walker Road.....	1.43	1955	1.43	2,551
401	Walker Road to Hwys. 3 and 3B.....	3.50	1955	3.50	5,428
21	Forest to Jct. 7 and 82.....	11.17	1956	11.17	137,693
402	Colbourne Road Overpass.....	.40	1956	.40	9,867
79	Sydenham River Bridge.....	.50	1956	.50	13,052
7	1 mi. west Forest Road west.....	8.20	1956	8.20	241,862
7	Perch Creek (Jct. 7 and 402) east.....	7.66	1956	6.50	277,295
2, 98	Channelization, Jct. 2 and 98.....	.97	1956	.97	15,466
2	Chatham By-pass.....	1.72	1957	.....	806
98	Blenheim to Charing Cross.....	5.00	1958	.....	996
TOTALS.....		41.65		33.77	736,107



Highway 401 facing west at the Belle River Road, Chatham District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Total of Tons Placed
401	Comber Side Road Cloverleaf.....	1.10	1,171
21	Forest to Jct. 7 and 82.....	11.17	16,338
79	Sydenham River Bridge.....	.50	731
2, 98	Channelization, Jct. 2 and 98.....	.97	1,869
401	Hwy. 98 to Hwys. 3 and 3B.....	.40	3,697
TOTALS.....		14.14	23,806

Concrete Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1957-58	Sq. Yds. Placed 1957-58	Pave-ment Width
401	Hwy. 98 to Hwys. 3 and 3B.....	4.93	1957	4.93	165,594	2-24'

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
401	Comber Side Road Cloverleaf.....	1.10	1955	1.10	3,329
21	Forest to Jct. 7 and 82.....	11.17	1956	11.17	28,284
402	Colbourne Road Overpass.....	.40	1956	.40	5,184
79	Sydenham River Bridge.....	.50	1956	.50	1,946
7	1 mi. west Forest Road west.....	8.20	1956	8.20	52,378
7	Perch Creek (Jct. 7 and 402) east.....	7.66	1956	.....	34,361
2, 98	Channelization, Jct. 2 and 98.....	.97	1956	.97	4,162
401	Hwy. 98 to Hwys. 3 and 3B.....	4.93	1957	4.93	10,171
TOTALS.....		34.93		27.27	139,815



Bridge across the Sydenham River — Highway 79, Chatham District.

Bituminous Resurfacing of Old Pavements

Hwy. No.	Location	Miles Done 1957-58	Tons Placed 1957-58
2	Tilbury to Thamesville.....	5.5	5,500
18A	Kingsville to Malden Centre.....	6.5	6,500
98	Charing Cross to Tilbury.....	5.0	5,000
3	Town of Essex.....	1.9	3,000
18	Town of Amherstburg.....	0.6	800
21	Town of Forest.....	1.5	5,300
TOTALS.....		21.0	26,100

Bridges Built

Hwy. No.	Location	Type
401	Comber Side Road	Structural steel and concrete
401	C. & O. and N.Y.C.R.R.	Structural steel
402	Colbourne Road.....	Structural steel and concrete
79	Sydenham River.....	Steel truss
7	Pulse Creek.....	Rigid frame extension

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
3	C. & O.	Sandwich South, Oldcastle Crossing.....	X
21	C.N.R.	Plympton Twp., Wyoming Crossing.....	X
402	C.N.R.	City of Sarnia.....	X



Highway 21, one and one-half miles north of Forest, Chatham District.

New Buildings Added this Year

Hwy. No.	Location	Type of Building	Purpose	Compl.
2	District Yard, Chatham, 165' x 90'.....	Brick and concrete block	District garage	Feb. 1958
2	District Yard, Chatham, 165' x 42'.....	Brick and concrete block	Heated storage	Feb. 1958
3	Patrol Yard, Port Alma.....	Frame concrete footing	Salt storage	Nov. 1957
21	Patrol Yard, Thamesville.....	Frame concrete footing	Salt storage	Nov. 1957

Totals of Other Work Done on District No. 1

Item	Number or Amount	Total Tons	Total Miles
Off-roads parks maintained.....	6	.....	.....
Roads snowplowed, and kept open, King's Highways.....	17	.....	585
Roadside picnic places maintained.....	90	.....	.....
Routine maintenance, King's Highways.....	.....	.....	585
Salt for de-icing roads (raw).....	.....	3,830	585
Salt in sand, stockpiled.....	.....	200	.....
Sand for winter maintenance.....	.....	800	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	1,564,000	.....	.....
Shrubs received and planted this year.....	6,400	.....	.....
Signs erected or replaced.....	4,200	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	37
Snow hedges planted this year.....	.....	.....	1
Traffic lights installed this year.....	5	.....	.....
Weed control.....	.....	.....	585
Zone painting on King's Highways.....(gals)	6,200	.....	585

DISTRICT No. 2—LONDON**W. L. FRASER, District Engineer****Construction**

This season saw the completion and opening to traffic of the 40 miles of dual lane Hwy. 401 from Eastwood to Hwy. 4, providing a by-pass of Woodstock, Ingersoll and London. This highway was put in use on May 31, 1957, with official opening ceremonies.

In October 1957, the first prequalified contract called by the Province of Ontario, Department of Highways, was awarded, covering 7.5 miles of grading and paving reconstruction of Hwy. 22 from Lobo Village to Hickory Corners.

Reconstruction of three dangerous locations in this District was undertaken during the past season and resulted in the completion of the Ekfrid C.N.R. subway on Hwy. 2, which was known locally as "The Devil's Funnel," the near completion of overheads at the C.N.R. Creditville level crossing on Hwy. 2, and the St. Thomas N.Y.C. overhead crossing on Hwy. 3.

Maintenance

Hwy. 401 presented a problem in winter maintenance due to light traffic during winter months which caused difficulty in clearing ice and snow off the passing lane.

Due to exceedingly low precipitation during the latter part of the winter, winter maintenance costs were less than anticipated.



Highway 401, one mile west of Sweaburg Road, London District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
81	Aux Sable and Mud Creek bridges and Approaches	1.5	1955	1.3	0.2
2, 53	Channelization at Eastwood completed.....	.....	1957	....	....
2	Creditville C.N.R. overhead and approaches.....	1.0	1957	....	0.2
3	St. Thomas N.Y.C. overhead and approaches.....	1.0	1957	....	0.7
3	Stoney Creek Bridge and approaches at Tillsonburg.....	0.2	1957	....	0.1
5, 24	Paris to Howells Corners.....	7.6	1956	6.0	1.6
19	Tillsonburg to Mt. Elgin.....	6.6	1957	....	0.5
22	Lobo to Hickory Corners.....	7.5	1957	....	2.2
	TOTALS.....	25.4		7.3	5.5

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
2	Ekfrid C.N.R. subway.....	0.4	1957	0.40	13,591
3	St. Thomas N.Y.C. overhead.....	1.0	1957	0.80	31,290
3	Stoney Creek bridge and approaches at Tillsonburg.....	0.2	1957	0.06	2,229
3	Eagle to Kent County Line.....	8.33	1956	1.00	38,000
5, 24	Paris to Howells Corners.....	7.6	1956	1.60	95,374
19	Tillsonburg to Mt. Elgin.....	6.6	1957	0.40	1,017
22	Lobo to Hickory Corners.....	7.5	1957	2.20	56,610
81	Aux Sable and Mud Creek bridges and approaches.....	1.5	1956	1.20	20,570
401	Intersection Hwy. 73, cloverleaf interchange.....	.....	1956	55.0	34,028
401	Intersection Hwy. 4, cloverleaf interchange.....	.....	1956	70.0	37,973
401	Intersection Culloden Rd., cloverleaf interchange.....	.....	1956	75.0	48,656
401	Intersection Tower Line Rd. interchange.....	.....	1957	47.0	23,700
	TOTALS.....	33.13		254.66	403,038

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Total Tons Placed 1957-58
2	Ekfrid C.N.R. subway.....	0.4	6,557
2, 53	Channelization at Eastwood.....	.....	2,107
3	Eagle to Kent County Line.....	3.3	32,230
3	St. Thomas N.Y.C. overhead.....	0.5	1,009
5, 24	Paris to Howells Corners.....	5.7	35,815
19	Mt. Elgin to Ingersoll.....	5.1	28,438
81	Aux Sable and Mud Creek bridge and approaches.....	1.5	19,972
401	Hwy. 2 to Sweaburg Rd.....	1.9	10,232
401	Wellington Rd. to Hwy. 4.....	0.9	5,700
401	Intersection Hwy. 73 cloverleaf.....	0.5	5,941
401	Intersection Culloden Rd. cloverleaf.....	.....	2,050
	TOTALS.....	19.8	150,051

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles	Tons Placed 1957-58
80	Walkers Corners to Alvinston.....	5.4	4,000
81	Hwy. 22 to Hwy. 7.....	15.6	10,000
	TOTALS.....	21.0	14,000



D.H.O. Patrol garage on Highway 74, London District, near junction with Highway 401.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
3	Eagle to Kent County Line.....	8.33	1956	3.33	.....
5, 24	Paris to Howell's Corners.....	7.6	1956	5.10	25,946
401	East Dingman Creek to Hwy. 4.....	5.2	1956	0.4	12,217
401	Hwy. 2 to Sweaburg Rd.....	4.74	1956	0.74	9,588
401	Intersection Hwy. 73 cloverleaf.....	0.5	1956	0.3	6,355
401	Intersection, Culloden Rd. cloverleaf.....	1.00	1956	0.93	6,662
3	St. Thomas to N.Y.C. overhead.....	1.0	1957	0.5	2,006
2, 53	Channelization at Eastwood.....	1.00	1957	1.00	4,744
19	Mt. Elgin to Ingersoll.....	7.0	1957	7.0	21,899
2	Ekfrid Twp. subway.....	0.4	1957	0.4	1,500
2, 3, 73	Invitation Bid 3-57, various.....	0.22	1957	0.22	648
208	Long Point Rd. at Big Creek.....	0.11	1957	0.11	241
TOTALS.....		37.10		20.03	91,806

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
24	Mount Pleasant southerly.....	10	29,739	1,345.35

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Sand Used Cu. Yds.
80	Walkers Corners to Alvinston.....	5.4	15,700	320
81	Hwy. 22 to Hwy. 7.....	15.6	47,691	940
TOTALS.....		21.0	63,391	1,260



Highway 401 at interchange for Highway 4, London District.

Bridges Built

Hwy. No.	Location	Type
81	Aux Sable River.....	Structural steel, concrete deck
22	Sydenham R., Poplar Hill.....	Reinforced concrete, pre-stress beams
3	N.Y.C. overhead, St. Thomas east.....	Reinforced concrete
101	Tower Line Road.....	Reinforced concrete
2	C.N.R. overhead, Creditville.....	Reinforced concrete
2	Stoney Creek at Tillsonburg.....	Double Box, rigid frame
2	Three Bridges.....	Rigid frame
2	Talbotville west.....	Rigid frame

New Buildings

Hwy. No.	Location	Type of Building	Purpose	Completed
2, 4	Survey building, 12' x 20'.....	Frame	Contract office	
4	Salt shed.....	Frame	Salt storage	Jan. 1958

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights
24	L.E. & N.E.R.	City of Galt, south limits.....	Bell X
3	C.N.R.	West limits, Town of Simcoe.....	Bell X

Totals of Other Work Done on District No. 2

Item	Number or Amount	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	120	21
.....	5	.....	.....
Roads snowplowed and kept open, King's Highways.....	All	.....	520
Roadside picnic places maintained.....	132	.....	.....
Routine maintenance, King's Highways.....	.....	.....	520
Salt for de-icing roads (raw).....	.....	12,067	500
Salt in sand, stockpiled.....	.....	2,175	.....
Sand for winter maintenance.....	.....	30,000	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces..... (sq. yds.)	1,621,400	.....	.....
Shrubs received and planted this year.....	7,498	.....	.....
Signs erected or replaced.....	4,553	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	75
Snow hedges planted this year.....	.....	.....	3/10
Traffic lights installed this year.....	1	.....	.....
Weed control..... (gals.)	908.5	.....	781
Zone painting on King's Highways..... (gals.)	5,200	.....	620

DISTRICT No. 3—STRATFORD**L. D. BARRETT, District Engineer****Construction**

During the fiscal year ending March 31, 1958, work was completed on 11 carry-over contracts and four new contracts. Five contracts were started but not completed.

Grading, culverts and granular base was completed on the following sections of Highway: Hwy. 86 — Dorking Easterly; Hwy. 86 — Molesworth to Morrisbank Corners; Hwys. 7 and 8 — New Hamburg Diversion, opened to traffic (the diversion by-passes both New Hamburg and Baden and eliminates nine sharp curves and two railway crossings).

Grading, culverts, granular base and hot-mix paving completed on: Hwy. 7 — Guelph westerly to Breslau; Hwy. 8 — Seebach Hill to Mitchell (this included a diversion at Whirl Creek eliminating four very sharp curves and a narrow steel truss bridge); Hwy. 84 — Hensall to St. Joseph.

Hot-mix paving completed on Hwy. 86 — Dorking easterly.

Resurfacing was completed on Hwy. 4 from Wingham to Hwy. 9, and on Hwy. 8 from Preston to Kitchener.

Structures and approaches completed: Concrete bridge constructed over Springbrook Creek on Hwy. 7, east of Breslau, replacing a narrow concrete structure. Concrete bridge constructed over Whirl Creek on New Diversion, Hwy. 8, east of Mitchell. Concrete bridge constructed over Mallett River on Hwy. 9, east of Teviotdale, replacing a very narrow Bow String Arch structure, reducing the gradients and improving the visibility on the approaches. Concrete bridge constructed over the south branch of Pine River on Hwy. 21, replacing an old narrow concrete arch structure. Special design Double Box Concrete Culvert constructed on Hwy. 21, 2.5 miles south of Bayfield, replacing an old concrete culvert and built to stream bed level on down stream end in an effort to prevent further erosion. Two concrete bridges constructed over Maitland River and Maitland River overflow, on Hwy. 87, 1.5 miles west of Harriston, replacing two very narrow concrete Bow String Arch structures and also eliminating two very sharp turns on structure approaches.

All diversions and structures completed were opened for traffic. The weather conditions were very favourable for all phases of construction during the summer and good progress was made on all contracts.

Maintenance

During the year Hwys. 6, 24 and 51 were taken over from Owen Sound District adding 55 miles and 2 extra patrols to District 3 and a proportional increase in maintenance expenditure.

All bridges have now been painted to Department standards and no new contracts should be required next year for bridge painting.



Offices of the Department of Highways at Stratford.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58
8	Seebach's Hill to Mitchell.....	5.8	1957	5.8
7	Guelph to 6.3 mi. west.....	6.3	1957	6.3
9	Arthur to 9.9 mi. west.....	9.9	1957	3.5
24, 51	Erin to Caledon.....	6.7	1957	3.1
34	Hensall to St. Joseph.....	10.5	1957	10.5
21	Bayfield to St. Joseph.....	10.5	1957	5.8
36	Elmira to 5.8 mi. easterly.....	5.8	1957	4.9
36	Wingham east.....	7.7	1957	4.3
	Hickson Stream diversion.....	0.4	1957	0.4
	Guelph to Fergus.....	9.9	1956	9.5
7, 8	New Hamburg diversion.....	6.3	1955	2.3
TOTALS.....		79.8		56.4

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1956-57
86	Molesworth westerly.....	6.5	1955	6.0	0.50	5,195
7, 8	New Hamburg diversion.....	6.3	1955	1.0	5.30	171,700
86	Hyslop bridge.....		1956	....	....	24
87	Maitland River bridges.....		1956	....	....	15,610
8	Seebach's Hill to Mitchell.....	5.8	1957	....	5.80	209,940
8	Whirl Creek bridge.....		1957	....	....	5,000
21	Pine River bridge.....		1956	....	....	7,880
7	Springbrook Creek bridge.....		1957	....	....	14,780
7	Guelph westerly.....	6.3	1957	....	6.30	184,252
21	Culvert 2 mi. south of Bayfield...		1957	....	....	1,854
97	Hickson Stream diversion.....	0.4	1957	....	0.40	1,430
9	Arthur westerly.....	9.9	1957	....	3.50	98,115
9	Mallett River bridge.....		1957	....	....	18,700
84	Hensall to St. Joseph.....	10.5	1957	....	10.50	209,600
86	Elmira easterly.....	5.8	1957	....	....	16,696
21	Bayfield to St. Joseph.....	10.5	1957	....	0.05	68,210
24, 51	Erin to Caledon.....	6.7	1957	....	0.05	7,932
86	Wingham east.....	7.7	1957	0.07	0.07	10,300
4	Wingham to Hwy. 9.....	14.8	1957	....	14.80	70,040
6	Guelph to Fergus.....	9.9	1956	....	9.90	257,500
TOTALS.....		101.1		7.0	57.17	1,374,758

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Tons Placed 1957-58
86	Molesworth westerly.....	6.5	535
7, 8	New Hamburg diversion.....	6.3	1,100
86	Hyslop bridge.....	.....	10
87	Maitland River bridges.....	.....	686
8	Seebach Hill to Mitchell.....	5.8	24,270
8	Whirl Creek bridge.....	.....	195
21	Pine River bridge.....	.....	498
7	Springbrook Creek bridge.....	.....	1,222
7	Guelph westerly.....	6.3	17,820
97	Hickson Stream diversion.....	0.4	400
9	Arthur westerly.....	9.9	13,750
84	Hensall to St. Joseph.....	10.5	20,720
86	Dorking easterly.....	5.8	14,068
86	Molesworth westerly.....	6.5	11,576
86	Elmira easterly.....	5.8	14,340
21	Bayfield to St. Joseph.....	10.5	6,050
4	Wingham to Hwy. 9.....	14.8	23,750
8	Kitchener to Preston.....	.....	10,086
6	Guelph to Fergus.....	9.9	9,700
8, 21	Clinton to Goderich to Kincardine.....	47.0	9,999
23	Listowel to Teviotdale.....	13.0	9,997
24, 51	Erin, Coulterville to Orangeville, Caledon.....	15.0	10,000
86	Bluevale to Wroxeter side road.....	4.0	4,991
86	5.7 mi. east of Dorking to Hwy. 7.....	19.0	14,995
97	Plattsville to Blackhorse Cor.....	9.0	10,000
100	Thamesford to Hwy. 7.....	15.0	15,000
TOTALS.....		221.0	245,778

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles	Tons Placed 1957-58
6	Guelph to Arthur.....	26	234.0
7	Stratford to Elginfield.....	26	519.0
9	Arthur westerly.....	12	97.5
19	Stratford to Milverton.....	17	69.0
23	Elginfield to Listowel.....	47	238.5
24	Guelph to Erin.....	20	297.0
86	Molesworth to Bluevale.....	10	153.0
97	Plattsville to 4 mi. west of Galt.....	12	672.0
100	Thamesford to Hwy. 7.....	16	1,002.0
19	New Hickson patrol yard.....	.....	184.5
TOTALS.....		186	3,466.5

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
21	Pine River bridge.....	.....	1956	.....	576
8	Seebach's Hill to Mitchell.....	5.8	1957	5.8	24,870
8	Whirl Creek bridge.....	.....	1957	.....	233
8	Town of Mitchell.....	.....	1957	.....	196
7	Guelph westerly.....	6.3	1957	6.3	22,910
7	Spring Brook Creek bridge.....	.....	1957	.....	1,226
21	Culvert, 2 mi. south of Bayfield.....	.....	1957	.....	344
84	Hensall to St. Joseph.....	10.5	1957	10.5	25,510
86	Dorking easterly.....	5.8	1957	5.8	14,182
86	Molesworth westerly.....	6.5	1957	6.0	16,905
97	Hickson Stream diversion.....	0.4	1957	0.4	985
6	Guelph to Fergus.....	9.9	1957	2.5	3,900
TOTALS.....		45.2	.....	37.3	111,837

Granular Base Laid where No Grading was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Tons Placed 1957-58
8	Town of Mitchell to 1-B-4-57.....	.....	1957	629

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
84	Hensall to St. Joseph.....	9.5	28,550	954.9
86	Bluevale to 4.1 mi. east, and patching.....	4.5	15,157	405.3
86	6 mi. east of Dorking to Jct. Hwys. 86 and 7.....	19.0	51,474	1,470.3
97	Black Horse Corners to Plattsville.....	8.3	26,947	678.6
100	Thamesford to Jct. Hwys. 100 and 7.....	14.5	48,220	1,466.7
100	Thamesford to Kintore.....	5.3	15,834	553.2
	O'Loane Avenue, District Office entrance.....	.....	754	.....

Construction

86	Molesworth to 6.5 mi. west.....	6.5	21,612	594.0
24	Erin to Orangeville.....	12.0	36,000	900.0
51	Hwy. 24 to Caledon.....	2.5	7,300	187.5
TOTALS.....		82.1	251,848	7,210.5

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done This Year	Tons Placed This Year
	Kitchener to Preston.....	6.0	14,190
4	Wingham to Hwy. 9.....	14.8	38,430
TOTALS.....		20.8	52,620

Bridges Built

Hwy. No.	Location	Type of Bridge or Structure
7	Springbrook creek bridge, 4 mi. east of Kitchener.....	R. F. concrete
8	Whirl Creek bridge, 2 mi. east of Mitchell.....	R. F. concrete
21	Pine River bridge, 4 mi. north of Amberley.....	R. F. concrete
87	Harriston bridges, 1.5 mi. west of Harriston, and 1.6 mi. west of Harriston.....	Steel span, concrete abut., R. F. concrete

Totals of Other Work Done on District No. 3

Item	Number	Tons	Miles
Bridges painted.....	15	.....	.....
Calcium dust layer on gravel roads.....	.....	405.93	60.5
Roads snowplowed and kept open, King's Highways.....	18	.....	604.0
Roadside picnic places maintained.....	296	.....	.....
Routine maintenance, King's Highways.....	.....	.....	604.0
Salt for de-icing roads (raw).....	.....	7,742	548
Salt in sand, stockpiled.....	.....	2,175	.....
Sand for winter maintenance, stockpiled.....	.....	55,795	.....
Seeding by department's forces.....(sq. yds.)	1,558,480	.....	.....
Shrubs received and planted this year.....	10,446	.....	.....
Signs erected or replaced.....	4,054	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	170
Weed control.....	.....	.....	718
Zone painting on King's Highways.....(gals.)	4,895	.....	532

DISTRICT No. 4—HAMILTON**R. E. RICHARDSON, District Engineer****Construction**

The opening to traffic of the Hwy. 2 and Hwy. 25 interchanges on the Queen Elizabeth Way during the year together with the elimination of the former traffic lights at these two intersections has greatly reduced the number of accidents at this location while expediting the flow of traffic. Work on the Burlington Bay Skyway proceeded throughout the year according to schedule, steel erection being approximately 95 per cent completed and 30 per cent of the concrete deck constructed. In addition three contracts for placing hydraulic fill in the approaches were completed.

Maintenance

At the Homer Bridge on the Queen Elizabeth Way over the Welland Canal, a set of illuminated signs was erected in an attempt to utilize more effectively the three-lane capacity of the structure. A control tower was erected, from which vantage point the Ontario Provincial Police can determine when traffic volume warrants the use of the third lane for eastbound, and when for west-bound traffic. From this tower, the appropriate wording, directional arrows, etc., can be illuminated on the overhead signs at the approaches to the bridge. This system appears to be functioning effectively.

The old light poles, no longer in use, are being removed from the boulevard of the Queen Elizabeth Way thus eliminating many potential traffic hazards.

At the junction of Hwys. 2 and 53 (Duff's Corners) a new 5-Bay Patrol Garage was opened. This central location now serves as a patrol headquarters for two patrols as well as a permanent winter sanding depot.

Eight contracts for winter sanding were awarded, each averaging approximately 75 miles in length. Approximately 670 tons of raw chemical and 60,000 tons of treated sand were applied. A quantity of sand at each stockpile site was re-treated, using from 100 to 200 pounds of salt per ton in addition to original treatment, and this heavier concentration of salt produced the desired results of faster reactions of the chemical plus immediate traction for vehicles.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. this Year
2	Cainsville.....	0.87	1956	0.87
QEW	Freeman interchange.....	0.2	1956	0.2
6	Mount Hope to Caledonia.....	4.58	1957	4.58
QEW	Hwy. 25 interchange.....	4.50	1957	4.50
20	Intersection Hwy. 53 and 20 to Lincoln County Line.....	3.70	1957	3.70
TOTALS.....		13.85		13.85



Construction of Queen Elizabeth Way underpass at the site of the Chedoke Expressway interchange, August, 1957, Hamilton District.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl.	Tons Placed
QEW	Geneva Street (St. Catharines).....	0.72	1956	0.72	21,029
2	Cainsville.....	0.87	1956	0.87	39,269
QEW	Freeman interchange.....	0.2	1956	0.20	29,800
6	Mount Hope to Caledonia.....	4.58	1957	4.58	254,085
QEW	Hwy. 25 interchange.....	4.50	1957	4.50	119,494
20	Intersection 53 and 20 to Lincoln County Line.....	3.70	1957	3.70	107,296
403	Jct. Hwy. 25 and QEW to Freeman inter- change.....	2.75	1957	1.80	108,096
TOTALS.....		17.32		16.37	679,069

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
QEW	Hwy. 2 interchange.....	3.0	1956	3.0	8,682
403	Brant Street overpass.....	0.5	1956	0.5	500
QEW	Freeman interchange.....	0.2	1956	0.2	2,871
6	Mount Hope to Caledonia.....	4.6	1957	4.6	34,841
20	Elfrida easterly.....	3.7	1957	3.7	13,658
QEW	Hwy. 25 interchange.....	4.5	1957	.....	15,447
TOTALS.....		16.5		12.0	75,999



Pouring concrete to pave deck of Burlington Bay Skyway, March, 1958.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
52	Hwy. 2 to Hwy. 5 (Sections).....	5.5	5.5	7,000
54	5 mi. west of Caledonia westerly for 4 mi. (Sections).....	1.8	1.8	2,000
97	5 mi. west of Freelon.....	0.3	0.3	400
TOTALS.....		7.6	7.6	9,400

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1957-58	Tons Placed 1957-58
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Hot Mix Patching

QEW, 3, 3C, 58	Vicinity of Port Colborne.....	8.5	8,500
3, 6, 24, 54	Vicinity of Jarvis.....	7.5	7,500
6, 8, 102, 53, 55	Vicinity of Hamilton.....	9.00	9,000
TOTALS.....		25.00	25,000

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
6	Milgrove to Aberfoyle (patches).....	8.00	16,645	971.98
8	Peter's Corners to Sheffield.....	6.00	16,645	971.98
54	Caledonia to Onondaga (patches).....	7.00	16,506	752.38
99	Dundas to Copetown.....	5.00	13,350	803.15
TOTALS.....		26.00	63,146	3,499.49

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
52	Hwy. 97 to Wellington County Line.....	1.9	4,807	165.75

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
52	Hwy. 2 to Hwy. 5 (sections for mulch).....	5.5	7,000
54	5 mi. west of Caledonia westerly for 4 mi (sections for mulch).....	1.8	2,000
QEW	Hwy. 2 interchange.....	3.0	4,625
QEW	Geneva Street, St. Catharines.....	0.72	891
403	Brant Street overpass.....	0.50	180
2	Cainsville.....	0.87	2,910
QEW	Freeman interchange.....	4.60	195
6	Mount Hope to Caledonia.....	4.58	17,682
20	Jct. Hwy. 53 and 20 to Lincoln County Line.....	3.70	7,767
TOTALS.....		25.27	43,250

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles	Tons Placed
QEW	Burlington to Ft. Erie.....	67.1	2,166
2	Oakville to Brantford.....	32.3	765
3	Ft. Erie to Simcoe.....	85.5	2,992
3A	Chamber's Corners to Welland.....	9.3	350
3C	Ft. Erie to Ridgeway.....	6.8	323
5	Trafalgar to Brant County Line.....	32.3	1,300
6	Port Dover to Guelph.....	59.3	2,675
7	Guelph to Hwy. 10.....	30.4	300
8	Galt to Niagara Falls.....	57.8	1,100
8A	St. Davids to Queenston.....	2.8	45
20	Burlington to Niagara Falls.....	45.9	316
24	Simcoe to Port Dover.....	9.3	150
25	QEW to Hwy. 7.....	22.2	209
52	Hwy. 2 to Hwy. 97.....	13.9	50
53	Hwy. 20 to Hwy. 2.....	13.1	680
54	Cayuga to Cainsville.....	26.9	180
55	Hamilton to Hwy. 53.....	1.9	396
56	Elfrida to Hwy. 3.....	14.8	200
57	Bismarck to Beckett's Bridge.....	8.8	88
58	Port Colborne to Hwy. 8.....	15.7	405
97	Hwy. 6 to Galt.....	13.7	30
99	Dundas to Hwy. 24.....	16.9	50
102	Dundas to Hamilton.....	2.1	560
TOTALS.....		588.8	15,330

Bridges Built

Hwy. No.	Location	Type of Bridge or Structure
403	Lot 17, Con. 2, Nelson (C.N.R.).....	Rigid frame
403	Lot 17, Con. 2, Nelson (C.N.R.).....	Rigid frame
2	Farley Tract, Brantford Township.....	Rigid frame
403	Lots 13 and 14, Brant's Block, Nelson.....	Plate girder
403	Lot 13, Brant's Block, Nelson.....	Rigid frame
403	Lot 13, Brant's Block, Nelson.....	Rigid frame
6	Lot 5, Range 1, Seneca.....	Rigid frame
QEW	Lots 15 and 16, Cons. 2 and 3, Nelson.....	Rigid frame
403	Lot 14, Brant's Block, Nelson.....	Rigid frame
403	Lot 14, Brant's Block, Nelson.....	Rigid frame
403	Lot 14, Brant's Block, Nelson.....	Rigid frame
QEW	Lot 30, Con. 1, Saltfleet.....	Rigid frame



Northern approach to Burlington Bay Skyway, June, 1957.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
6	C.N.R.	Dunnville, mileage 58.66.....	2 lights, 2 bells
56	C.N.R.	Dunnville, mileage 48.00.....	2 lights, 1 bell
3	C.N.R.	Cayuga, mileage 39.27.....	2 lights
3C	C.N.R.	Dunnville, mileage 3.71.....	2 lights, 1 bell
58	N.S. & T.	Welland, mileage 3.01.....	2 lights, 1 bell

New Buildings

Hwy. No.	Location	Type	Purpose	Compl.
2	Jct. Hwys. 2 and 53 (5 bay garage).....	Concrete block and brick	Patrol garage	1957

Totals of Other Work Done on District No. 4

Item	Number	Total Tons	Total Miles
Bridges painted.....	3	.....	.....
Calcium dust layer on gravel roads.....	.....	4	1
Off-road parks maintained.....	1	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	588.87
Roadside picnic places maintained.....	29	.....	.....
Routine maintenance, King's Highways.....	.....	.....	588.87
Salt for de-icing roads (raw).....	.....	670	588.87
Salt in sand, stockpiled.....	.....	5,500	.....
Sand for winter maintenance.....	.....	60,200	.....
Scale houses maintained.....	7	.....	.....
Seeding by department's forces.....(sq. yds.)	2,086,040	.....	.....
Shrubs received and planted this year.....	650	.....	.....
Signs erected or replaced.....	9,178	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	65.00
Snow hedges planted this year.....	.....	.....	.....
Traffic lights installed this year.....	2	.....	.....
Weed control.....	.....	.....	91.00
Zone painting on King's Highways.....(gals.)	11,701	.....	921.00

DISTRICT No. 5—OWEN SOUND**F. B. WHITELEY, District Engineer****Construction**

Construction activities proceeded as planned during the 1957-58 season. One construction problem arose which is perhaps worthy of discussion. The proposed south approach to the Rocky Saugeen River bridge on Hwy. 6 north of Durham is on a down grade and will be in a 50-foot side cut which places the new road approximately 25 feet below the existing road. The excavation of the cut slope showed that the material was saturated. An interceptor drain was placed in the slope. This intercepted sufficient water to enable the contractor to maintain the detour on the old road. Additional excavation and borings showed the makeup of the proposed cut to be a 3-4 feet of old gravel over a 4-5 foot layer of saturated sand over a saturated very fine sand and silt.

The problem arose as to what to do with this "soupy" material since it would be almost impossible to handle. The new grade line meant that about 15 feet of this material had to be excavated. The solution arrived at was to raise the grade from 5% to 6%. This eliminated practically all excavation of this very fine sand and silt. Several new type compaction units have been used on this district with good results.

1. Steel grid roller. This type was tried in very sandy material and did a much better job than the wobble-wheel rollers but the contractor decided that it was too expensive. The roller is quite heavy and requires a medium size crawler tractor to pull it.
2. Self-propelled wobble-wheel roller. In appearance this was a miniature turnapull with wobble wheels at the back. This machine was very manoeuvrable and did excellent work but again the contractor felt that he would have too much money invested in a machine that could be used for only one purpose.

The year 1957-58 saw the advent of mobile office and laboratory trailers in this district. We are greatly pleased with their design and efficiency.

Maintenance

Four new bulk storage sheds were erected by District forces at Orangeville, Flesherton, Walkerton and Swan Lake. A five bay patrol garage at Arthur was completed by the Department of Public Works in September, 1957. Straw mulching and seeding was carried out for the first time in this District during the 1957-58 season and satisfactory results were obtained. A wobble-wheel roller was assigned to this District in the fall of 1957 and it was used for compaction on maintenance shouldering with satisfactory results.



Grading contract, Highway 26 facing east at Woodford, Owen Sound District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
6	Bell's Creek and C.P.R. overpass to 3.0 mi. south of Mt. Forest.....	0.57	1957	....	0.23
6	Mt. Forest to Orchard.....	7.27	1957	..	5.00
6	Beatty Saugeen River structures and approaches to 7 mi. north of Mt. Forest....	0.34	1957	....	0.17
6	Rocky Saugeen River structure and approaches to 3.5 mi. north of Durham.....	0.80	1957	....	0.30
6	Durham to Dornock.....	8.00	1957	....	1.50
21	Saugeen River structure, Southampton.....	1.00	1957	....	0.10
24	Mad River structure, Singhampton.....	0.13	1957	....	0.13
89	Rosemont to Primrose.....	8.60	1956	7.7	0.90
TOTALS.....		26.71		7.7	8.33

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed
6	Durham to Dornock.....	8.00	1957	.....	1.00	9,700
6	Mt. Forest to Orchard.....	7.27	1957	.....	1.70	14,190
24	Mad River structure to Singhampton.....	0.13	1957	.....	0.13	3,550
89	Rosemont to Primrose (grading).....	8.60	1956	6.30	2.30	57,784
89	Rosemont to Primrose (H.M. and Rosemont drainage).....	8.50	1957	.....	8.50	6,622
TOTALS.....		32.50		6.30	13.63	91,846



Highway 26 at Woodford after completion of grading contract.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
6	Mt. Forest to Orchard.....	7.27	3,890
6	1 mi. north of Wiarton to 18 mi. south of Tobermory.....	32.00	24,999
21	Saugeen River bridge, Southampton.....	1.00	1,090
24	Glen Huron side road, north-east of Singhampton.....	11.00	9,998
24	Mad River bridge, Singhampton.....	0.13	4,984
89	Primrose to Primrose (grading).....	8.60	11,821
89	Rosemont to Primrose (H.M.P.).....	8.50	22,087
TOTALS.....		68.50	78,869

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory.....	31	24,999
91	Duntroon to Stayner.....	5	9,998
93	Crown Hill to Craighurst.....	7	19,000
TOTALS.....		43	53,997

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
24	Mad River, Singhampton.....	0.13	1956	0.13	366
26	Rosemont to Primrose.....	8.50	1956	8.50	20,386
TOTALS.....		8.63		8.63	20,752

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
4	Durham to 12 mi. east, various locations.....	6.0	18,000	1,547
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory....	30.0	89,919	300
21	Southampton cut-off.....	3.0	9,000	150
91	Stayner to Duntroon.....	4.5	13,500	225
TOTALS.....		43.5	130,419	2,222

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Chips Used 1957-58
4	Durham to 12 mi. east, scattered sections.....	5.0	14,320	670
6	From 8 mi. south of Tobermory southerly 10.5 mi.....	10.5	28,754	1,335
6	From Tobermory to 8 mi. south of Tobermory, scattered sections.....	1.5	4,296	201
TOTALS.....		17.0	47,370	2,206

Bridges Built

Hwy. No.	Location	Type
6	Beatty Sugeen River.....	Concrete arch.
6	Beatty Saugeen Tail Race.....	Concrete arch.
24	Mad River, Singhampton.....	Concrete, rigid frame

Automatic Signals at Railway Crossing

Hwy. No.	Railway	Location	Type Flash. Lights Bell
10	C.P.R.	Twp of Holland, Chatsworth; mileage 60.25, Owen Sound subdivision.....	X
93	C.P.R.	Twp. of Flos near Craighurst; mileage 73.91, Mactier subdivision.....	X

New Buildings

Hwy. No.	Location	Purpose	Compl.
6	Swan Lake, 28 mi. north of Wiarton.....	Bulk salt storage	June 1957
6	Arthur, 5 bay.....	Patrol garage	Sept. 1957
4, 9	Walkerton.....	Bulk salt storage	June 1957
10	Orangeville.....	Bulk salt storage	Dec. 1957
10	Flesherton.....	Bulk salt storage	Dec. 1957

Totals of Other Work Done on District No. 5

Item	Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	160	38
Off-road parks maintained.....	1	.....	.....
Roads snowplowed and kept open, King's Highways.....	14	.....	531.84
Routine maintenance, King's Highways.....	.....	.....	531.84
Salt for de-icing roads (raw).....	.....	10,614	531.84
Salt in sand, stockpiled.....	.....	1,763	.....
Sand for winter maintenance.....	.....	34,389	.....
Scale houses maintained.....	1	.....	.....
Signs erected or replaced.....	6,750	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	157
Traffic lights installed this year.....	2	.....	.....
Weed control.....	.....	.....	245
Zone paintings on King's Highways.....(gals.)	4,295	.....	419

DISTRICT No. 6—TORONTO**J. B. WILKES, District Engineer****Construction**

With the completion of the Toronto by-pass from the Rouge River to Hwy. 27 in 1957, work was started west from Hwy. 27 to Hwy. 25. The grading and most of the structures were completed as far west as Hwy. 10.

On the Queen Elizabeth Way, the first contract for widening to six lanes was awarded, and all the concrete base pavement was completed. Work progressed to make this highway a fully-controlled access highway. A level intersection at Kerr Street was eliminated and an interchange constructed. Another interchange to eliminate the level intersection at the Mississauga Road was partially completed and will be finished early in the spring of 1958. Four miles of service road construction were completed, resulting in the closing of many private entrances and several public road intersections.

In addition, contracts were let for additional culvert construction in preparation for other service road contracts — particularly in Trafalgar Township.

On August 1, 1957, a redistribution of boundaries was made. At that time certain construction contracts were in progress but not yet completed. On instructions from the Chief Engineer, this work was completed by District 6, and is shown as part of District 6 expenditure. The actual roads were turned over to the appropriate districts as completed.



Widening the Queen Elizabeth Way to six lanes east of the Highway 27 overpass which appears in the distance. November, 1957, Toronto District.

Maintenance

As an experiment, a number of "cat's eye" type of reflectors were installed on the centre-line of Hwy. 7 on two sharp curves at the York-Ontario County Line. These installations are being carefully watched by the District Maintenance forces to determine their effectiveness and their endurance under winter plowing and sanding.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
10	3 mi. south of Caledon to Orangeville.....	10.00	1957	.....	3.70
11	Newmarket to Bradford.....	5.60	1957	.....	.05
11	Orillia to Washago.....	5.40	1957	.....	5.40
12 T.C.	01-3 mi. south of Orillia By-pass.....	3.30	1956	1.65	1.65
*27	Dixon Road.....	1.64	1957	.....	1.64
*27	Rexdale Road.....	.50	1957	.....	.50
103 T.C.	01-2 mi. Waubashene to Port Severn....	4.70	1956	3.00	1.70
400	King Twp. Service Road.....	8.42	1957	.....	5.72
*401	Hwy. 27 to Etobicoke Creek.....	2.60	1957	.....	2.60
*401	Etobicoke Creek to Hwy. 10.....	2.90	1957	.....	2.90
*401	Hwys. 401 and 10.....	.83	1957	.....	.83
*401	Hwy. 10 to Trafalgar Line.....	5.21	1957	.....	1.66
*401	Toronto/Trafalgar to Hwy. 25.....	7.76	1957	.....	3.75
Q.E.W.	Hwy. 27 to Humber River.....	3.75	1957	.....	3.75
Q.E.W.	Cawthra Road.....	1.57	1957	.....	1.57
Q.E.W.	Mississauga Road.....	2.36	1957	.....	1.53
Q.E.W.	Kerr Street to Oakville Interchange.....	2.09	1957	.....	1.88
TOTALS.....		68.63		4.65	40.83
*401 and 27 barrel arch culverts					

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
2	Port Credit to Clarkson.....	2.70	1956	2.70	143,667
10	3 mi. south of Caledon to Orangeville.....	10.00	1957	1.30	39,765
11	Newmarket to Bradford.....	5.60	1957	.05	4,300
11	Orillia to Washago.....	5.40	1957	5.40	195,064
12	South Orillia By-pass.....	3.30	1956	3.30	19,440
27	Dixon Road.....	1.64	1957	1.64	58,600
400	King Twp. Service Road.....	8.42	1957	4.20	55,480
401	Hwy. 27 to Etobicoke Creek.....	2.60	1957	2.60	19,472
401	Etobicoke Creek to Hwy. 10.....	2.90	1957	2.90	33,843
401	Hwys. 401 and 10.....	.83	1957	.83	34,293
401	Hwy. 10 to Trafalgar line.....	5.21	1957	1.00	7,676
Q.E.W.	Hwy. 27 to Humber River.....	3.75	1957	3.75	44,200
Q.E.W.	Cawthra Road.....	1.57	1957	1.57	42,424
Q.E.W.	Mississauga Road.....	2.36	1957	1.18	49,790
Q.E.W.	Kerr Street.....	2.09	1957	1.88	35,800
10	Credit River structure approaches.....	.....	.....	.....	3,715
69	Black River structure approaches.....	.....	.....	.....	11,870
69	Severn River structure approaches.....	.....	.....	.....	6,858
401	Str. 7 structure approaches.....	.....	.....	.....	5,106
401	Str. 5 structure approaches.....	.....	.....	.....	272
401	Str. 8 structure approaches.....	.....	.....	.....	5,275
401	Str. 3.....	.....	.....	.....	14,878
Q.E.W.	Expressway structure approaches.....	.....	.....	.....	24,849
TOTALS.....		58.37		34.30	856,637



Highway 401 at the Kennedy Road underpass in Metropolitan Toronto.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	Bradford to Fennels.....	7.2	1957	7.2	20,697
26	Stayner easterly.....	7.6	1957	7.6	227,097
8, 27 50	Patching.....	.....	1957	.....	2,911
TOTALS.....		14.8		14.8	250,705

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Total Miles	Total Tons Placed 1957-58
48	South of Baldwin.....	6.00 17,984
2	9,672
10	10,000
11	31,450
12	2,752
26	12,690
27	665
48	25,000
69	842
92	95
103	9,100
400	10,009
401	282
Q.E.W.	8,281
TOTALS.....		6.00 138,822



Interchange and Overpass at junction of Highways 2 and 401 near Westhill, Toronto District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.		Tons Placed 1957-58
Various		12,468

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1957-58	Total Sq. Yds.	Pav. Width
Q.E.W.	Hwy. 27 to Humber, base only	3.75	1957	3.75	42,500	36'

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
2	Port Credit to Clarkson.....	2.70	1957	2.70	25,042
26	Stayner easterly.....	7.60	1957	7.60	18,792
11	Orillia to Washago.....	5.40	1957	5.40	30,358
Q.E.W.	Hwy. 27 to Humber.....	C/Leaf Legs	.....	.....	1,545
TOTALS.....		15.70		15.70	75,737

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed
Various	Isolated patching only	860

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
48	2 mi. north of Ballantrae to 7.05 mi. north.....	5.05	15,980	263
93	Crown Hill north.....	8.00	24,448	402
103	Waubashene to Port Severn.....	4.59	14,585	250
501	Port Severn to Honey Harbour.....	9.00	27,504	450
TOTALS		26.64	82,517	1,365

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1957-58	Tons Placed 1957-58
11	Bradford to Fennels	7.20	19,349
12, 47	Hot Mix patching.....		5,699
48	Hot Mix patching.....		6,451
9, 27	Hot Mix patching.....		842
50	Hot Mix patching.....		
401	Hot Mix patching.....		
TOTALS		7.20	32,341

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
47	Stouffville to Bloomington.....	4.0	9,312	532
48	Ballantrae north.....	10.0	23,280	1,330
49	Hwy. 50 to Hwy. 27.....	10.0	23,284	1,336
50	Bolton to Hwy. 9.....	9.0	20,952	1,197
TOTALS.....		33.00	76,828	4,395

Bridges Built

Hwy. No.	Year Begun	Compl. 1957-58	Type
401	1957	1957	Rigid
27	1956	1957	Rigid
10	1957	1957	Rigid
69	1956	1957	Rigid
69	1956	1957	Rigid
69	1956	1957	Rigid
92	1956	1957	Rigid
O.E.W.	1956	1957	Rigid
O.E.W.	1957	1957	Rigid
O.E.W.	1956	1957	Rigid

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Type Flash. Lights Bell
400			
S. Rd.	C.N.R.	Innisfil Twp., Lots 6 and 7, Conc. 8.....	X
48	C.N.R.	Georgina Twp., Lots 23 and 24, Conc. 6 and 7.....	X



Mulch pavement, Highway 48, one mile south of Vivian, Toronto District.

Totals of Other Work Done in District No. 6

Item	Total Number	Total Tons	Total Miles
Bridges painted.....(gals. 995)	5	.....	.....
Calcium dust layer on gravel roads.....	.....	48	16
Roads snowplowed and kept open, King's Highways .....	.....	.....	684.08
Roadside picnic places maintained.....	86	.....	.....
Routine maintenance, King's Highways.....	.....	.....	684.08
Salt for de-icing roads (raw).....	.....	9,363	684.08
Salt in sand, stockpiled.....	.....	3,467	.....
Sand for winter maintenance.....	.....	69,338	.....
Scale houses maintained.....	6	.....	.....
Seeding by Department's forces.....(sq. yds.)	1,635,900	.....	.....
Shrubs received and planted this year.....	16,490	.....	.....
Signs erected or replaced.....	6,700	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	83.4
Traffic lights installed this year.....	2	.....	.....
Weed control.....	.....	.....	321
Zone painting on King's Highways.....(gals.)	17,568	.....	1,700

DISTRICT No. 7—PORT HOPE**H. D. DUFF, District Engineer****Construction**

During the fiscal year 1957-58 construction was started on 12 miles of Hwy. 401, including two grading contracts, one interchange and four structures between Newcastle and Port Hope. Grading was carried out on 9.1 miles of Hwy. 401 between Brighton and Trenton, with 4.5 miles completed during the year. The erection of the structural steel was completed on the Trent River bridge, total length 640 feet, and the construction was started on the Wooler Road structure on Hwy. 401.

Completed structures include: Shelter Valley Creek, Union Creek, C.N.R. on Hwy. 35 at Lindsay, C.P.R. on T.C.H. 7 Lindsay, and Jackson's Creek on T.C.H. 133, Peterborough.

Construction was completed on approximately 18 miles of Hwy. 35 north-erly to Lindsay with the exception of 5.5 miles of top course pavement.

Five grading contracts under construction included three on Hwy. 7 T.C.H., one on Hwy. 35 and one on Hwy. 36 in the Lindsay area and a structure at Hwy. 7 and the Scugog River and at the C.N.R. crossing. Construction was also underway on Hwy. 28 south of Peterboro and Hwy. 45 north of Roseneath.

One of the unusual techniques applied was the use of methyl alcohol as an additive in the making of grout for pre-stressed concrete beams during the winter months. This protected the grout during the curing period with satisfactory results.

Maintenance

On August 1, 1957, 72 miles of highway were transferred to Port Hope District. This included Hwy. 12 from Brooklin to Atherley and Hwy. 69 from Brechin to Washago. This additional mileage brought the total in the District to 702.9 miles.

New equipment received in the district included a mobile sweeper, a shoulder maintainer and an eductor for cleaning catch basins. These units proved satisfactory and they have enabled us to raise the standard of maintenance with but little increase in expenditure.

In May we moved into the three-bay extension to our district garage and the 36' x 60' addition to the storage building. The Department of Public Works started construction of a five-bay patrol garage at the junction of Hwys. 28 and 115 during the late summer and its completion is expected early in June, 1958. An extension to the district office was started in October and it should be ready for occupancy by mid-July. This addition will provide additional space for the clerical and construction staff.

Because of the large number of construction contracts during the year, tree planting and grass seeding programs were extensive and, with a few exceptions, we had good catches.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
401	C.N.R. west of Trenton to 4.6 mi. westerly.	4.6	1956	.....	4.60
401	Hwy. 30 to 4.53 mi. easterly.....	4.53	1956	.....	4.53
121, 500	Jct.....	0.74	1956	.....	0.74
45	Roseneath northerly.....	7.3	1956	4.00	3.30
36	Jct. of Hwys. 7 and 36 to Lindsay By-pass north.....	1.7	1957	.....	1.70
35	Jct. Hwys. 7A and 35 northerly 5.44 mi.....	5.44	1956	.....	5.44
35	Jct. of 115 and 35 to Jct. of 7A and 35.....	7.03	1956	.....	7.03
35	Lindsay to Fenelon Falls.....	13.6	1957	.....	13.60
35	Lindsay By-pass northerly.....	3.5	1957	.....	3.50
7	T.C.H. Oakwood to 2 mi. west of Lindsay..	3.54	1956	.....	3.54
7	T.C.H. Jct. of 7 and 35 to 2 mi. west of Lindsay.....	5.26	1956	.....	5.26
2	Grafton Cemetery Corners to 1.25 mi. east.	1.25	1956	.....	1.25
500	Bobcaygeon to Jct. 121.....	1.0	1957	.....	1.0
503	Sebright to Kinmount.....	2.25	1957	.....	2.25
TOTALS.....		61.74		4.00	57.74

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
401	Bridge over Trent River.....	.....	1955	.....	.....	29,603
401	C.N.R. west of Trenton to 4.6 mi. westerly.....	4.6	1956	.....	4.60	49,030
121, 500	Jct.....	0.74	1956	.....	0.74	8,646
121	Union Creek to 2 mi. east of Burnt River.....	.....	1957	.....	.....	760
45	Roseneath northerly.....	7.3	1956	4.00	3.30	116,233
36	Jct. of Hwys. 7 and 36 to Lind- say By-pass north.....	1.7	1957	.....	1.70	51,677
35	Jct. of Hwys. 7A and 35 north- erly 5.44.....	5.44	1956	.....	5.44	169,442
35	Jct. of Hwys. 115 and 35 to Jct. of 7A and 35.....	7.03	1956	.....	7.03	72,558
35	Lindsay By-pass northerly.....	3.5	1957	.....	3.50	118,296
35	C.P.R. Overhead, Pontypool....	.....	1956	.....	.....	5,079
12	Manchester to Greenbank.....	5.8	1957	.....	5.80	12,810
7	T.C.H. Oakwood to 2 mi. west of Lindsay.....	3.54	1956	.....	3.54	92,554
7	T.C.H. Jct. of 7 and 35 to 2 mi. west of Lindsay.....	5.26	1956	.....	5.26	160,912
7	T.C.H. Jct. of 7 and 35 to 1.15 mi. east.....	1.15	1957	.....	.....	4,250
2	Grafton Cemetery Corner to 1.25 mi. east.....	1.25	1957	.....	1.25	37,873
TOTALS.....		47.31		4.00	42.16	929,723

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
35	Lindsay to Fenelon Falls.....	13.6	1957	13.6	27,180
133	Jct. 28 to Jct. 7.....	5.2	1957	5.2	12,000
TOTALS.....		18.8		18.8	39,180



Grading the Lindsay By-Pass, August, 1957, Port Hope District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Total Tons Placed 1957-58
7, 35	Lindsay By-pass east and north to south limits of Contract 54-136 and C.N.R. overhead.....	3.5	28,952
36	Hwy. 36 extension from Jct. of Hwy. 7 to 36 Lindsay By-pass.....	1.7	17,880
35	Jct. of Hwys. 7A and 35 northerly.....	5.5	10,249
401	Newtonville Interchange.....	1.5	1,515
133	Hwy. 28 to Hwy. 7.....	5.2	10,187
2	Oshawa to Port Hope.....	26	15,050
12	Manchester to Greenbank.....	5.8	4,632
35	Lindsay to Fenelon Falls.....	13.6	32,674
7A	Hwy. 7A from Hwy. 35 to 115.....	10.8	14,980
7, 12	Vicinity of Greenbank and Manilla.....	15.0	9,971
2, 401	Grafton to Newcastle.....	32.0	14,995
45	Roseneath northerly.....	7.3	49,383
401	West limits of C.N.R. R/W N. of Trenton westerly.....	4.6	2,269
7	2 mi. west of Lindsay.....	3.54	42,070
35	Jct. of Hwys. 115 and 35 to Jct. Hwys. 35 and 7A.....	7.03	97,008
401	Hwy. 30 easterly.....	4.53	808
7	0.81 miles west of Con. Rd. between Con. 1 and 2 Ops Twp. to 1,000 feet east of intersection of Hwy. 7 and 35.....	5.26	70,993
2	Grafton Cemetery Corner and Shelter Valley Creek.....	1.25	25,381
35	Jct. Hwys. 35 and 7A northerly.....	5.44	73,104
35	Lindsay south.....	7.30	10,917
121, 500	Jct. of Hwys. 121 and 500.....	0.74	1,382
35	Pontypool.....		234
121	2.0 mi. east of Burnt River.....		265
TOTALS		167.59	534,900



Channelization at the junction of Highway 121 and Secondary Highway 500, Port Hope District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles	Tons Placed 1957-58
7A	Caesarea turn to Jct. Hwy. 115.....	20	8,000
35	Pontypool to 7 mi. south of Lindsay.....	10.5	4,000
36	Nogies Creek to Burleigh Falls.....	20.3	3,500
45	7 mi. north of Roseneath to Norwood.....	12.0	5,000
133	Jct. Hwy. 28 to Jct. Hwy. 7.....	5.4	2,000
500	Jct. 121 south 4 mi.....	4.0	500
503	Kirkfield to Kinmount.....	45.8	3,000
505	Jct. Hwy. 46 to Uphill.....	10.3	200
507	Jct. Hwy. 36 to Haliburton County Line.....	15.5	3,000
TOTALS.....		146.8	29,200

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1957	Tons Placed 1957-58
121, 500	Jct.....	0.74	1956	0.70	1,629
35	Lindsay to 7.3 miles south.....	7.3	1956	7.30	16,722
35	Jct. of Hwys. 35 and 7A northerly.....	5.5	1957	5.50	10,975
35	Jct. Hwys. 115 and 35 to Jct. Hwys. 7A and 35.....	7.03	1956	7.03	18,771
2	Grafton cemetery corner east 1.25 mi.....	1.25	1957	1.25	4,880
TOTALS.....		21.82		21.78	52,977

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
503	Sebright easterly 5.8 mi.....	5.8	5.8	8,700
503	Norland westerly 1.8 mi.....	1.8	1.8	2,700
	TOTALS.....	7.6	7.6	11,400

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
7A	Caesarea turn to Hwy. 115.....	20.0	46,636	1,617
35	Pontypool to 6 mi. south of Hwy. 7.....	5.0	14,000	364
36	Norgies Corner P.O. to Burleigh Falls.....	19.3	51,920	1,463
45	Norwood to 12.4 mi. south.....	12.4	35,396	1,022
46	Kirkfield to Coboconk.....	2.3	4,500	98
121	In village of Burnt River.....	1.0	2,500	77
500	Jct. Hwy. 131 south 3.3 mi.....	3.3	8,023	231
503	Kirkfield to Sebright.....	13.0	32,500	728
503	Sebright to Kinmount.....	32.5	86,336	2,184
505	Victoria Rd. to Uphill.....	2.0	5,900	112
507	Hwy. 36 to Cochrane.....	10.5	28,250	896
	TOTALS.....	121.3	315,961	8,792

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1957-58	Tons Placed 1957-58
12	Manchester to Greenbank.....	5.8	14,883
35	Lindsay to Fenelon Falls.....	13.6	21,450
	TOTALS.....	19.4	36,333

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
7A	Village of Port Perry.....	1.1	2,860	110
35	Jct. Hwys. 35 and 121 to Jct. Hwy. 35A.....	2.7	6,750	297
36	Nogies Creek bridge easterly 1 mi.....	1.0	2,700	105
46	Hwy. 7 to Eldon station road.....	8.0	21,804	970
121	Fenelon Falls northerly 3 mi.....	3.0	7,500	320
500	3.3 mi. south of Hwy. 121 southerly 2 mi.....	2.0	5,400	220
503	Kirkfield northerly 3.7 mi.....	3.7	8,140	425
	TOTALS.....	21.5	55,154	2,447

Bridges Built

Hwy. No.	Location	Type
121	2 mi. east of Burnt River.....	Rigid Frame
35	C.P.R. overhead at Pontypool.....	Rigid Frame
2	Shelter Valley Creek.....	Rigid Frame



Construction of relocated Highway 35, nine miles south of Lindsay, Port Hope District.

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Type	
			Flash. Lights Bell	Short Arm Bell
2	C.N.R.	Hamilton — Mileage 261.9	2	2
2	C.P.R.	Hamilton — Mileage 30.32	2 lights 1 bell	

Totals of Other Work Done on District No. 7

Item	Amount or Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		140	42
Off-road parks maintained.....	3		
Roads snowplowed and kept open, King's highways.....			611.93
Roads snowplowed and kept open, secondary highways.....	4		91.00
Roadside picnic places maintained.....	115		
Routine maintenance, King's highways			611.93
Routine maintenance, secondary highways.....			91.00
Salt for de-icing roads (raw).....		5,396	702.93
Salt in sand, stockpiled		3,404	
Sand for winter maintenance.....		78,276	
Scale houses maintained	1		
Seeding by Department's forces. ....(sq. yds.)	1,437,480		
Shrubs received and planted this year.....	12,897		
Snow fence erected, dismantled, stored.....			72.91
Traffic lights installed this year	3		
Weed control.....			598.9
Zone painting on King's highways .....(gals.)	6,809		551.0
Zone painting on secondary highways .....(gals.)	215		16.5

DISTRICT No. 8—KINGSTON**L. E. WALKER, District Engineer****Construction**

As in recent years, Hwy. 401 has been of prime importance this year, especially with the opening of the Kingston By-pass. This section consists of 2 miles on new Hwy. 38, 7.23 miles on Hwy. 401, ending at Hwy. 15. It also includes seven new bridges at (1) C.P. Railway, (2) Old Hwy. 38, (3) Division St., (4) Montreal St., (5) C.N. Railway, (6) Cataraqui River and, (7) Hwy. 15.

Granular base and paving work was started on 23.8 miles of Hwy. 401 from Trenton east of Belleville. Grading was completed on 10.4 miles of Hwy. 401 from Gananoque west and also on 11.1 miles east of Brockville. An additional 7.8 miles of grading was started from Brockville west. A new bridge was built and opened at Moira Lake south of Madoc in conjunction with 2.7 miles of development road which was graded.

Two unusual occurrences took place, both respecting stability failure in materials. (1) A 30-foot clay fill built on sloping rock adjacent to the Gananoque River subsided four feet on three different occasions due to lack of friction, on the sloping rock surface. The river has to be widened on the other side to maintain the river flow with the same section. (2) Sand cushion is usually unstable due to a lack of water content, but on Hwy. 29 it rained for 10 days and the sand became saturated and unstable. It was necessary to close the road and maintain a detour one mile in length.

Maintenance

Summer and winter maintenance was carried out on 616 miles of King's Highways and 14.7 miles of secondary routes including 9.3 miles of new Hwy. 401 which were taken over following an official opening of the Kingston By-pass in November. The winter of 1957-58 was unusual since little winter maintenance was required until January 15, 1958. From that date to February 28, the district was in continuous operation day and night due to continual snow. During this period, only six shifts were off day or night. Nevertheless, after cleanup in the Kingston district, heavy plows and a snow blower were released to other districts even harder hit by the storms.

In the summer season this district received two new types of equipment, a catch basin eductor, truck mounted, and a power broom. The eductor was fitted with additional self loading pump and extension hoses and has proved to be an excellent machine for cleaning sand-clogged corrugated iron and concrete culverts which are too small to maintain properly in any other manner; this in addition to its regular work of cleaning catch basins. The District made very considerable interior renovation to the patrol building at Erinsville and now has inside storage for all equipment used on this patrol as well as water for proper maintenance of vehicles.

Grass seeding and mulching with straw was carried out on 14 miles of two-lane highway and on 14 miles of Hwy. 401 in the Belleville area, as construction allowed. Luminaires were erected at the Canadian entrance to the Thousand Islands bridge in co-operation with the Bridge Authority. Lighting was installed at the junction of Hwys. 2 and 38 at the western entrance to the



Highway 401 looking west from junction with Highway 15, November, 1957, Kingston District.

Kingston By-pass, Hwy. 401. The docks for the ferry "Quinte," at the Glenora-Adolphustown crossing of the Bay of Quinte, were rebuilt from the water line to the top, and luminaire lighting was installed on all four docks as an aid to night operation. New moveable access ramps for the shore portion of these docks were also built and installed.

Construction was started on the new standard seventeen-bay district garage and nine-bay heated storage building on the new district yard site in the City of Kingston. Following construction, all concrete, gutter, curb and bridges on new Hwy. 401 were sprayed with a silicone solution to prevent damage from salt used in winter maintenance procedures.

Grading and Installing Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
7 T.C.	Hwy. 38 west.....	7.1	1956	1.10	6.00
7 T.C.	Perth to Bathurst.....	6.9	1957	.....	5.10
15	Joyceville north to Brewers Mills.....	3.5	1957	.....	0.60
29	Brockville to Frankville.....	14.97	1957	.....	14.97
33	Millhaven to C.I.L. Plant.....	1.36	1957	.....	1.36
38	Hwy. 2 to Glenvale.....	5.75	1955	5.49	0.29
401	Hwy. 14 to Moira River.....	0.26	1955	.....	0.26
401	6.63 mi. east of Moira River easterly	5.56	1955	3.30	2.26
	Access road from end of Cont. 57-104 (Hwy. 401) to Hwy. 2.....	0.56	1957	.....	0.56
401	New Hwy. 38 easterly (old Hwy. 38 westerly).....	1.90	1955	1.70	0.20
401	Hwy. 15 easterly.....	8.13	1955	6.60	1.53

401	Cataraqi River east to Joyceville side road and connecting link to Hwy. 2.....	2.50	1957	.....	2.50
401	Gananoque west.....	7.13	1956	5.10	2.03
401	Brockville west to Hwy. 2.....	6.50	1957	.....	1.30
401	West Limits, Hwy. 29 interchange to North Augusta road.....	1.27	1957	.....	.42
401	Brockville east to Maitland.....	4.80	1955	3.90	.90
401	0.75 mi. east of Maitland to City Road — Prescott.....	6.54	1956	0.50	6.04
TOTALS.....		84.73		27.69	46.32

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Years Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
7 T.C.	Hwy. 38 west.....	7.1	1957	.....	7.10	66,065
15	Joyceville north to Brewers Mills.....	3.5	1957	.....	0.50	5,765
29	Brockville to Forthton.....	14.97	1957	.....	14.97	123,874
33	Millhaven to C.I.L. Plant.....	1.36	1957	.....	1.36	15,002
38	Hwy. 2 to Glenvale.....	5.75	1956	5.10	0.65	14,349
401	Sidney Twp. bridge 3.....	.....	1957	.....	.....	1,359
401	Hwy. 33 east.....	5.41	1957	.....	5.11	78,608
401	Road All. between Lots 18 and 19 to East Moira River.....	5.75	1957	.....	5.00	162,919
401	Hwy. 14 (including interchange) to Moira River.....	.....	1957	.....	.....	23,376
401	Tyendinaga Twp. bridge 3.....	.....	1956	.....	.....	19,782
401	Moir River east.....	6.63	1957	.....	4.85	72,710
401	6.63 mi. east of Moira River East.....	5.56	1956	2.50	3.06	250
401	6.63 mi. east of Moira River East.....	6.07	1957	.....	5.0	176,911
401	Hwy. 38 to west limit of Division St.....	3.62	1956	3.30	0.32	44,926
401	C.P.R. overhead, Kingston Twp. bridge 12.....	.....	1957	.....	.....	3,009
401	West limits of interchange at Division St. to Cataraqi River.....	3.02	1957	2.0	1.02	43,391
401	Hwy. 15 east.....	8.13	1956	4.1	4.03	100
401	Cataraqi River east to Joyceville side road.....	6.52	1957	.....	4.80	206,014
401	Gananoque west.....	7.13	1955	1.3	5.83	14,823
401	Leeds and Lansdowne 6 overpass 1 mi. north of Gananoque.....	.....	1957	.....	.....	14,658
401	West limits of Hwy. 29 interchange to North Augusta road.....	1.27	1957	.....	0.42	4,285
401	Elizabethtown Twp. bridge 15.....	.....	1957	.....	.....	11,928
401	Weigh scales and approaches 0.7 west of Jct. Hwys. 401 and 16.....	.....	1957	.....	.....	2,235
TOTALS.....		91.97		18.3	64.02	1,106,339
Dev. Rd.						
274	Madoc south.....	2.69	1957	.....	2.69	23,369

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
2	Blessington Creek to 3 mi. east of Belleville.....	0.20	1957	.....	0.20	689



Highway 401 north of Kingston facing west towards Montreal St.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
2	Blessington Creek, 3 mi. east of Belleville.....	0.20	689
2, 401	Brockville west.....		10,000
2, 502	On Hwy. 502, 0.7 mi. east from Jct. of 2 and 502.....		10,009
7 T.C.	Hwy. 38 west.....	7.1	66,065
7 T.C.	Perth to Bathurst.....	6.90	7,186
15	Barriefield to Joyceville.....	14.00	14,940
15	Joyceville north to Brewers Mills.....	3.50	5,765
29	Brockville to Forthton to Frankville.....	14.97	136,578
33	Millhaven to C.L.L. Plant.....	1.36	18,808
38	Hwy. 2 to Glenvale.....	5.75	15,394
38	Hwy. 2 to Glenvale.....	5.80	634
401	Sidney Twp. bridge 3.....		1,359
401	Hwy. 33 to easterly.....	5.41	78,608
401	Rd. All. between Lots 18 and 19 to the Moira River.....	5.75	170,719
401	Hwy. 14 to Moira River and Hwys. 401 and 14 interchange.....		25,564
401	Moira River easterly.....	6.63	72,710
401	Bridge 3 Tyendinaga Township.....		19,782
401	6.63 mi. east of Moira River easterly for 5.56 mi.....	5.56	250
401	6.63 mi. east of Moira River easterly.....	6.07	176,911
401	Hwy. 38 easterly to west limits of Division St.....	3.62	99,926
401	C.P.R. overhead to Kingston Twp. Bridge 12.....		3,009
401	Hwy. 38 easterly.....	1.90	3,000
401	West limits of Division St. interchange to Cataraqui.....	3.02	67,764
401	Hwy. 15 east.....	8.13	100
401	Cataraqui River east to Joyceville side road.....	6.52	206,014
401	Leeds and Lansdowne overpass 6, 1 mi. north of Gananoque.....		14,795
401	Gananoque westerly.....	7.13	14,827
401	West limits of Hwy. 29 interchange to North Augusta Road.....	1.27	4,285
401	Elizabethtown Twp. Bridge 15.....		11,928
401	Brockville to Maitland.....	4.80	3,773
401	Jct. Hwys. 401 and 16 westerly 0.7 mi.....	0.70	2,345
TOTALS		126.09	1,263,737

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1957-58
2	Trenton to Johnstown.....	2,697
7 T.C.	Marmora to Perth.....	4,550
14	Belleville to Marmora.....	200
15	Barriefield to Perth.....	677
29	Brockville to Smith Falls.....	452
32	Gananoque to Hwy. 15.....	30
33	Kingston to Glenora.....	225
33	Trenton to Stirling.....	100
37	Belleville to Hwy. 7.....	50
38	Cataraqi to Hwy. 7.....	750
41	Napanee to Kaladar.....	112
42	Forthton to Westport.....	524
95, 96	Wolfe Island.....	450
401	Gananoque to Crystal Beach.....	292
401	Hwy. 38 to Hwy. 15.....	416
TOTALS.....		11,525

Bituminous Hot Mix Pavement

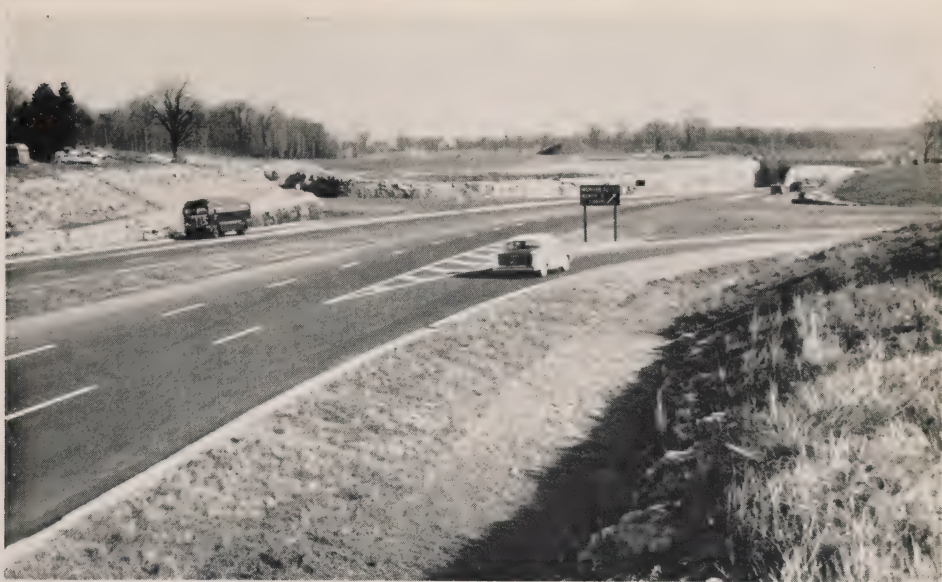
Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
2	Blessington Creek 3 mi. east of Belleville....		1957		77
33	Millhaven to C.I.L. Plant.....	1.36	1957	1.36	5,390
401	1 mi. north east of Gananoque, Leeds and Lansdowne overpass.....		1957		352
401	Hwy. 401 and Edward St. interchange.....	0.5	1956	0.50	664
401	Hwy. 33 east to road allow. between Lots 18 and 19.....	5.41	1957	4.70	30,800
401	Cataraqi River east to Joyceville side- road and connection to Hwy. 2.....	6.52	1957	1.70	27,560
401	Jct. of Hwys. 16 and 401 westerly 0.7 mi....		1957		1,274
401	New Hwy. 38 westerly to Division St.....	3.62	1956	3.62	38,003
401	Division St. to Cataraqi River.....	3.02	1956	3.02	36,868
TOTALS.....		20.43		14.90	140,988

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
29	Brockville to Frankville.....	14.97	16,610	334
33	Millhaven to C.I.L. Plant.....	1.36	5,386	93
401	Division St. to Cataraqi River.....	3.02	17,131	75
401	Hwy. 38 to Division St.....	3.62	26,937	553
TOTALS.....		22.97	66,064	1,055

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1957-58	Tons Placed 1957-58
14 } 33 } 37 } 38 } 41 }	Pavement patching.....	90.7	9,300
502 } 401 }	Gananoque to Brockville.....	29	7,495
		119.7	16,795



Highway 401 north of Kingston facing east towards Montreal St.

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
95	Marysville to Horne's Point.....	21.1	46,333	1,691
96	West end to east end of Wolfe Island.....	7.4	16,216	665
Secondary Road				
509	Hwy. 7 to Clarendon.....	6.6	14,670	809
	TOTALS.....	35.1	77,219	3,165

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type of Bridge or Structure
2	Blessington Creek.....	1957	1958	R. F. concrete
401	Cataraqui River (Bridge 1).....	1955	1957	Concrete F.S. beam
401	Sydenham Rd. Underpass (Bridge 5).....	1955	1957	R. F. box beam
401	C.P.R. Shannonville, Tyendinaga Twp. (Bridge 3).....	1955	1957	R. F. pre- cast beam
401	Augusta Twp. Underpass, Edward St., Prescott (Bridge 9)	1956	1957	Con. abut. box beam deck
401	Sidney St. Underpass, (Bridge 3).....	1956	1957	R. F. box beam
401	Jct. Hwys. 401 and 2 Overpass (Bridge 6).....	1957	1957	Con. abut. box beam deck
401	North Augusta Rd. Underpass (Bridge 15).....	1957	1957	R.F. box beam
401	Cty. Rd. between Leeds, Lansdowne and Frontenac (Bridge 1)	1957	1958	R. F. concrete
401	Ormand St., Brockville (Bridge 13).....	1957	1958	R. F. concrete

Totals of Other Work Done on District No. 8

Item	Total Number or Amount	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		220	44.25
Off-road parks maintained.....	14		
Roads snowplowed and kept open, King's highways.....	13		616.27
Roads snowplowed and kept open, secondary highways.....	2		14.75
Roadside picnic places maintained.....	108		
Routine maintenance, King's highways.....			616.27
Routine maintenance, secondary highways.....			14.75
Salt for de-icing roads (raw).....		13,598.55	631.02
Salt in sand, stockpiled.....		1,233.23	
Sand for winter maintenance.....		21,860	
Seeding by Department's forces.....(sq. yds.)	2,250,600		
Shrubs received and planted this year.....	2,745		
Signs erected or replaced.....	1,860		
Snow fence erected, dismantled, stored.....			34.38
Weed control.....			771
Zone painting on King's highways.....(gals.)	8,986		730
Zone painting on secondary highways.....(gals.)	173		7.63



Completed paving contract on Highway 16, two miles south of Ottawa.

DISTRICT No. 9—OTTAWA

E. F. WETHERALL, District Engineer

Construction

Sections of highway relocation in the St. Lawrence Valley which were paved with one lift of H.L.8 base course under extremely cold temperatures in the winter of 1956-57 survived the spring breakup period with approximately 5 per cent breakup and a noticeable amount of longitudinal waves resulting from settlement of the granular base and sand cushion. A certain amount of patching and padding to grades was carried out prior to the application of the second lift of H.L.8 and the top course of H.L.3. The finished job gave very acceptable riding qualities which proves that hot laid asphalt can be applied under extreme cold conditions when the necessity arises.

Two mobile self-propelled rubber tired wobble-wheeled rollers were used for the first time on construction work in this district. The use of this type of roller produced satisfactory results particularly in restricted areas such as excavations and granular back fill operations adjacent to structures.

Thirty miles of highway relocation consisting of parts of Hwy. 2 and Hwy. 401 were officially opened to traffic in May, 1958, with completion of all construction work on November, 1957. Other portions of relocated Hwy. 2 between Aultsville and Iroquois, with gravel surfaces, were opened to local traffic in November, 1957.

The C.P.R. overhead at Ashton Station on the Trans-Canada section of Hwy. 15 west of Ottawa was completed in October, 1957, thus opening for through traffic another 8 mile section of the Trans-Canada Highway.

Maintenance

This year we used more sand than in other years particularly on Hwy. 2 in the high traffic areas and this was more effective during light falls which lasted 3 or 4 days when no appreciable amount of snow was falling.

We used this year a 3-ton 4-wheel drive truck for snow plowing. It was quite suitable for plowing, but we had not put on enough miles to see how it would stand constant use on major travelled routes. From our findings it is an excellent unit for plowing secondary roads.

Considerable work was done in the area around the St. Lawrence Seaway Project as the contracts on Hwy. 401 and relocated Hwy. 2 were nearing completion. A great deal of effort was needed in signing temporary and permanent crossings and highway intersections.

Grading and Installing Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Year	Miles Compl. 1957-58
401	Hwy. 401. Twp. Williamsburg	5.6	1955	4.84	0.76
43	Monkland easterly for 3.82 mi.	3.82	1955	3.27	0.55
401	5.2 mi. west of Moulinette Aultsville Co. Rd., and Conn. link with Hwy. 401	6.71	1956	6.17	0.54
31	Grading, culverts, HMP. Ottawa City Limits to 3 mi. south of Greely	10.7	1956	.....	1.07
2	North Dickinson's Landing, 0.1 mi. to structure	0.1	1956	.....	0.10
2	1.5 mi. east of Iroquois to west limits of Morrisburg and connecting links for Hwy. 2	5.90	1956	1.82	4.08
2	1.5 mi. west of Iroquois to 3.7 mi. easterly then connecting link, 0.9 mi. east on Hwy. 401	10.34	1956	4.07	6.27
401	0.22 mi. west to Aultsville Rd.	10.28	1956	0.86	9.42
401	0.5 mi. west of Moulinette to Hwy. 401 to Aultsville	11.20	1956	.....	11.20
401	New structure over Hosaic Creek to Williamsburg Twp.	100' Ap.	1956	.....	100' Ap.
2	From 1.5 mi. east of Morrisburg to 2.9 mi. west of Aultsville	3.80	1956	.....	3.80
43	Monkland easterly 5.5 mi.	5.50	1957	.....	5.40
2	Aultsville county road westerly	7.85	1957	.....	7.15
2	Iroquois to 2 mi. west of Morrisburg	4.80	1957	.....	3.22
31	1¾ mi. west of Hwy. 31 towards limits Contract 56-198 together with structure at Hosaic	4.80	1957	.....	3.94
15 T.C.	Perth to Drummond	7.50	1957	.....	2.55
17A	T.C. Ottawa east	0.5	1957	.....	0.50
17	Foundation and approach to Scale House, 1 mi. west of Alfred	0.14	1957	.....	0.03
	TOTALS	99.54		21.03	60.58



Completed paving contract on four lanes of Highway 31, two miles south of Ottawa.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
2 Rel.	0.5 mi. west of Moulinette					
	westerly.....	4.70	1956	4.08	0.62	2,963
15	Overhead Ashton Station					
	(approx.) 1100'		1955	.....	1100'	19,096
2 Rel.	5.2 mi. west of Moulinette to					
	Aultsville Road.....	6.71	1956	6.03	0.68	16,905
2	1.5 mi. west of Iroquois to 3.7					
	mi. east to then connecting					
	link to Hwy. 401, 0.9 mi.....	4.76	1956	3.37	1.39	20,114
31	Ottawa City Limits to 3 mi.					
	south of Greely.....	10.7	1956	.....	10.7	125,779
16	Ottawa to Jock River.....	7.0	1956	6.90	0.10	31
2	Hoople Creek north to Dickin-					
	son's Landing.....	0.1	1956	.....	0.1	12,013
S.R.	Morrisburg service road.....	5.90	1956	0.55	5.35	59,269
2	1.5 mi. of Iroquois to 3.7 mi.					
	easterly to then connecting					
	link, 0.9 mi., 5.64 mi. east					
	on Hwy. 401.....	10.34	1956	2.38	7.96	93,970
401	0.5 mi. west of Moulinette to					
	Hwy. 401.....	11.20	1956	2.50	8.70	43,560
	1.5 mi. east of Morrisburg to					
	2.9 mi. west of Aultsville.....	3.80	1956	.....	3.80	1,814
43	Monkland easterly, 5.5 mi.....	5.50	1956	.....	4.70	41,114
	Frontage Road.....	1.52	1956	0.78	0.74	9,864
	Aultsville County Road west....	7.85	1957	.....	5.83	120,665
43	Monkland easterly 5.5 mi.....	5.50	1957	.....	4.70	41,114
2	Iroquois to 2 mi. west of Mor-					
	risburg, 4.8 mi.....	4.80	1957	.....	1.01	12,816
31	1¾ mi. west of Hwy. 31 to					
	west limits Contract 56-198					
	with structure at Hosaic					
	Creek.....	4.8	1957	.....	3.12	73,851
15 T.C.	Perth to Drummond Centre....	7.50	1957	.....	1.35	13,143
17 T.C.	Ottawa east.....	0.5	1957	.....	0.43	541
TOTALS.....		103.18		26.59	61.27	708,628

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed
16	Johnstown to Bedell Station, Contract 56-397.....	19	1957	19	132,696

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
2	5.2 mi. west of Moulinette and Aultsville.....	5.85	8,232
2	1.5 mi. west of Iroquois to 3.7 mi. east then connecting link to Hwy. 401, 0.9 mi.....	3.74	7,067
31	Ottawa City Limits to 3 mi. south of Greely.....	10.7	33,898
2	Hoople Creek.....	0.10	31
	Struct. Gr. and HMP. at Hoople Creek to North Dickinson's Landing.....	0.1	2,463
	1.5 mi. east of Iroquois to west limits of Morrisburgh and connecting link to Hwy. 2.....	5.9	9,975
2	1.5 mi. west of Moulinette to 3.7 mi. east then connecting link, 0.9 mi. to 5.64 mi. east on Hwy. 401.....	10.34	27,165
	G.B. and HMP. 0.22 mi. west of Aultsville Road, 10.28 mi.....	7.36	37,684
401	0.5 mi. west of Moulinette to Hwy. 401, Aultsville.....	11.20	43,560
	1½ mi. east of Morrisburg to 2.9 mi. east of Aultsville.....	3.80	1,814
	Johnstown to Bedell Station.....	19	29,930
	Gr. C. Gr. Base and HMP. to Monkland east.....	2.21	6,236
17	Aultsville County Road westerly.....	0.68	1,871
17	Ottawa east, grading Mrl. Rd.....	0.43	541
	Haley's to Pembroke.....		12,007
	Carl. Place to Perth, Carl. Place to Smith Falls.....		15,018
	Ottawa to Arnprior, Carp to Almonte.....		14,997
17, 29	Vic. of Mississippi River Bridge, Almonte and Pakenham.....		9,995
	Vicinity of Lancaster.....		15,005
	TOTALS.....	81.22	277,498

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
17 T.C.	Cumberland to Ottawa City Limits.....	12	6,000
2, 34	Lancaster.....	10	4,000
17	Arnprior to Arnprior.....	4	1,000
29	Pakenham to Arnprior.....	5	3,000
17	Cobden area.....	3	1,000
43	Apple Hill to Alexandria.....	9	800
17	Hawkesbury to Point Fortune.....	7	1,000
	TOTALS.....	50	16,800

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
15 T.C.	Ashton Overhead.....				520
31	Ottawa City Limits to 3 mi. south of Greely.....	10.7	0.09	10.61	46,834
16	Ottawa to Jock River to H.M.P.....	7.0		7.0	11,068



Bridge over Hoople Creek on relocated Highway 2, three miles east of Ingleside, provides for higher water levels in the creek due to the St. Lawrence Seaway, Ottawa District.

2	Hoople Creek to north of Dickinson's Landing.....	0.1	.....	0.1	1,855
	1.5 mi. east of Iroquois to west limits of Morrisburg and connecting link to Hwy. 2.....	5.9	....	5.9	11,078
2,401	Hwy. 2 from 1.5 mi. west of Iroquois, east 3.7 mi. and 0.9 mi. connecting link to 5.88 mi. east of Iroquois.....	10.34	.....	5.9	49,062
2	From 0.5 mi. west of Moulinette to Hwy. 401, Aultsville.....	11.20	4.57	6.63	25,045
401	Hwy. 401 to 0.22 mi. west of Aultsville Rd.	10.28	1.28	9.00	39,022
43	Monkland easterly.....	5.5	.....	3.85	5,607
	TOTALS.....	61.02	5.94	48.99	190,096

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
511	Calabogie to Brightside, as required.....	2	6,600	100

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1957-58	Tons Placed 1957-58
2	Johnstown to Bedell Station.....	19	51,572

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
15	Stittsville to Ashton Station.....	10.8	34,880	1,320
508	½ mi. north of Calabogie to Black Donald.....	10.2	26,000	1,020
511	Calabogie to Brightside (as required).....	14.7	39,476	1,470
TOTALS.....		35.7	100,356	3,810

Bridges Built

Hwy. No.	Location	Compl. Opened Traffic	Type
15 T.C.	Ashton Overhead.....	1957	1 span, reinforced concrete
2	Bridge over Hoople Creek, Rel. 2.....	1957	1 span, reinforced concrete
401	Bridge over Hoasic Creek.....	1957	1 span, reinforced concrete

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Type Flash. Lights Bell
14	C.N.R.	Nepean, Lot 7, Con. IV.....	X
34	C.P.R.	West Hawkesbury, Lot 9, Con. V.....	X
2	C.N.R.	Matilda, Lot 27, Con. I, Mileage 100.75.....	X
31	C.N.R.	Williamsburg, Lot 30, Con. I, Mileage 92.70.....	X
Con. Link 401, 2	C.N.R.	Matilda, Lot 24, Con. I.....	X
Con. Link 401, 2	C.N.R.	Osnabruck, Lot 24, Con. II.....	X

New Buildings

Location	Purpose of Building	Year Begun	When Completed
Repair Garage, Northwest corner Tremblay Road, St. Laurent Boulevard, 170' x 90'.....	Repair Garage	1957	February 15, 1958

Totals of Other Work Done in District No. 9

Item	Total Number	Total Tons	Total Miles
Off-road parks maintained.....	5	.....	.....
Roads snowplowed and kept open, King's Highways.....	10	.....	599.8
Roads snowplowed and kept open, secondary highways.....	2	.....	41.6
Roadside picnic places maintained.....	203	.....	.....
Routine maintenance, King's Highways.....	.....	.....	599.6
Routine maintenance, secondary highways.....	.....	.....	41.6
Salt for de-icing roads (raw).....	.....	12,640	.....
Salt in sand, stockpiled.....	.....	600	.....
Sand for winter maintenance.....	.....	7,900	.....
Seeding by Department's forces.....(sq. yds.)	1,548,800	.....	.....
Shrubs received and planted this year.....	2,500	.....	.....
Signs erected or replaced.....	3,498	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	62
Weed control.....	.....	.....	839
Zone painting on King's Highways.....(gals.)	6,600	.....	775
Zone painting on secondary highways.....(gals.)	100	.....	12

DISTRICT No. 10—BANCROFT**T. A. SHARPE, District Engineer****Construction**

Four grading and one paving contracts were completed in Bancroft District in 1957-58.

On Hwy. 41 the contract for grading, culverts and granular base from MacAvoy Lake to Kilpecker Creek was completed. On this work there was a slide of considerable material into MacAvoy Lake and a change was made in the alignment of the road to secure a better footing.

On Development Road 291, the contract for grading, culverts and granular base from Cobden to Kelly's Inn was completed including a timber trestle bridge over the Snake River.

Grading, culverts and granular base were completed for the access road to the Bicroft Mine property. This contract, 56-101, was the first time limit contract in the province.

Grading, culverts and granular base were completed on Hwy. 41 from Golden Lake to Eganville and exceptionally good compaction was obtained from shoulder to shoulder. Where possible, the sub grade and the granular base (except Granular "A") were placed in thin lifts by scraper and then rolled and watered. This method of application of the material resulted in very good compaction over the entire contract.

On the hot-mix paving contract from Madoc to Bannockburn on Hwy. 62 the paving portion was completed in 1956 and the remaining work of shouldering and restoring the slopes to proper contour was completed early in the summer of 1957.

Two hot-mix contracts were let late in the fall. Only the base course between MacAvoy Lake and Kilpecker Creek was laid in 1957 as the weather was too cold to continue with the top course. Work was started on the section from Golden Lake to Eganville with some minor grading in Golden Lake. No pavement was laid due to the lateness of the season.

Maintenance

The use of straw and laycold bitumel in seeding was continued with satisfactory results except on light sand soil where the catch was poor. All grading contracts were seeded and mulched with Department equipment.

Day labour projects were carried on throughout the District. These included completion of 2.1 miles of new grade on Hwy. 127 and the paving with mulch of one mile completed the previous year. The revision of one-quarter mile of Hwy. 60, 2¼ miles east of Wilno, eliminated a sharp curve and a steep grade. In addition, 21.4 miles of county road from Eganville to Pembroke was assumed as part of Hwy. 41 and three-quarters of a mile, from Pembroke southerly, was ditched and resurfaced. The greater part of this work was done by Department forces and equipment. A considerable saving was effected by the construction of additional permanent salt sheds which, to a great extent, eliminated the use of bag salt. All new buildings were constructed by maintenance forces with the exception of the new district garage.



Grading, Highway 41, Bancroft District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
41	MacAvoy Lake to Kilpecker Creek.....	4.92	1955	3.00	1.92
41	Eganville to Golden Lake.....	8.29	1956	.....	8.29
127	Lake St. Peter northerly.....	3.70	1956	1.00	2.10
60	Wilno easterly.....	0.25	1957	.....	0.25
TOTALS.....		17.16		4.00	12.56

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
41	MacAvoy Lake to Kilpecker Creek.....	4.92	1957	4.92	44,884
41	Eganville to Golden Lake.....	8.29	1957	8.29	171,348
60	Deacon to Golden Lake.....	6.70	1957	.....	63,500
TOTALS.....		19.91		13.21	279,732

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
504	4 mi. east of Aspley to 14 mi. east of Aspley..	10	1957	10	9,430
506	Meyer's Cave to Fernleigh.....	6	1957	6	2,030
TOTALS.....		16		16	11,460

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Tons Placed 1957-58
60	Deacon to Golden Lake.....	3,000
60	Vicinity of Killaloe.....	14,985
127	Maynooth northerly.....	14,979
TOTAL.....		32,964

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
127	Lake St. Peter northerly 3 mi.....	3	6,000

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
41	MacAvoy Lake to Kilpecker Creek.....	4.92	1957	4.92	7,065

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
127	7.5 mi. north of Maynooth to 8.8 mi. north.....	1.3	1.3	2,145
109	Hwy. 28 to Bicroft Mine.....	3.4	3.4	5,610
TOTALS.....		4.7	4.7	7,755

Bituminous Prime on Gravel Roads

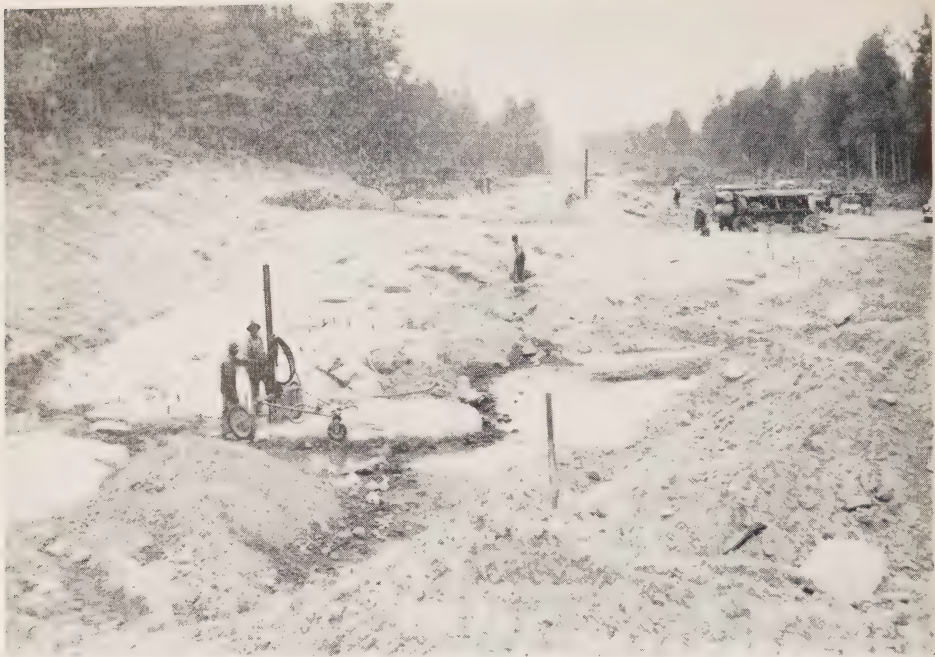
Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
127	Lake St. Peter to Whitney.....	14.0	30,921	629
500	Haliburton Boundary to Hermon.....	25.5	57,669	889
504	Apsley to Glen Alda to Apsley.....	31.8	82,779	1,490
506	Hwy. 41 to Plevna.....	22.1	55,516	1,067
513	Dacre to Caldwell.....	9.2	19,964	437
515	Combermere to Quadville.....	17.1	39,857	720
517	Combermere to Carlow Twp. Rd.....	9.9	30,143	451
521	Killaloe to Round Lake.....	11.5	24,860	604
523	Madawaska to Lyell to Wicklow Twp. line.....	13.1	33,062	609
620	Hwy. 62 to Glen Alda.....	12.0	38,425	598
TOTALS.....		166.2	413,196	7,498

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1957-58	Tons Placed 1957-58
17	Pembroke to 0.7 mi. south.....	0.7	1,155

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
41	Northbrook to 13 mi. north of Cloyne.....	20.0	142,321	5,367
41	Denbigh to Eganville.....	39.0		
62	Millbridge to Turiff.....	20.0		
TOTALS.....		79.0	191,682	7,261



Day Labour by D.H.O. Forces: Rock drilling on Highway 127, Bancroft District.

New Buildings

Hwy. No.	Location	Purpose
62	Combermere Patrol Yard.....	Salt shed
60	Madawaska Patrol Yard.....	Salt shed
41	Eganville Patrol Yard.....	Salt shed
41	Cloyne Patrol Yard.....	Salt shed
60	Killaloe Patrol Yard.....	Salt shed
62	Ormsby Patrol Yard.....	Equipment storage
	2 Asphalt Labs. (Portable).....	Asphalt Lab.
	3 Field Offices (Portable).....	Field Office

Totals of Other Work Done on District No. 10

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		29.2	16.6
Off-road parks maintained.....	6		
Roads snowplowed and kept open, King's Highways.....	7		397.43
Roads snowplowed and kept open, secondary highways.....	11		173.79
Roadside picnic places maintained.....	8		
Routine maintenance, King's Highways.....			397.43
Routine maintenance, secondary Highways.....			173.79
Salt for de-icing roads (raw).....		2,803.85	
Salt in sand, stockpiled.....		1,474.0	
Sand for winter maintenance.....		38,119.5	
Scale houses maintained.....	2		
Seeding by Department's forces.....(sq. yds.)	1,113,200		
Shrubs received and planted this year.....	5,636		
Signs erected or replaced.....	2,187		
Snow fence erected, dismantled, stored.....			19.89
Weed control.....			165.2
Zone painting on King's Highways.....(gals.)	4,945		278.32
Zone painting on secondary highways.....(gals.)	183		12.80

DISTRICT No. 11—HUNTSVILLE**H. C. DERNIER, District Engineer****Construction**

Work was continued on the Trans-Canada Highway. From Port Severn to Footes Bay grading is now completed and paving will be done in the summer of 1958. From Nobel to Pointe-au-Baril, grading is in progress and should be completed in 1958.

New pavement was laid this year between Gravenhurst and Huntsville on Hwy. 11. Work was started this year on the Huntsville By-pass. This work includes five miles of grading and culverts, and four structures. It is scheduled for completion in 1959.

During the year, this District was extended to the south as far as Crown Hill and work is progressing favourably on the south Orillia By-pass in this area.

Day labour construction work was carried out in various locations throughout the District to an extent comparable to that done in previous years.

Maintenance

During the past fiscal year this District availed itself of the opportunity to construct and develop lookout and picnic sites, under the 50 per cent subsidy offered by the Dominion Government for this type of work. Under this project two off-road parks and four roadside picnic sites were constructed.

The change in District boundaries which took place last summer put some of the northern portion of the district in Sudbury District and some in North Bay, and gave us some highways which were formerly in Toronto District.

On this territory we had a winter sanding contract, which was the first time this method of winter maintenance was carried out in District 11.



Department of Highways' garage at Huntsville.



A Day Labour grading project on Secondary Highway 500, six miles north of Irondale, Huntsville District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
121	Minden to Haliburton.....	1.1	1957	.....	.40
124	1.3 mi. east Ahmic Harbour to Ahmic Har- bour (day labour).....	1.3	1957	.....	1.30
35	North Branch of Muskoka River at Dorset	2.5	1957	.....	2.50
69 T.C.	Nobel to Shawanaga.....	9.9	1957	.....	5.00
11	Huntsville By-pass	5.16	1957	.....	3.00
69 T.C.	1.5 mi. south of Shawanaga River to 1.5 mi. north of Pointe-au-Baril.....	8.5	1957	.....	4.50
103 T.C.	3 Structures at Port Severn.....	1.0	1957	.....	0.50
35	Horsekiller Hill Revision.....	0.6	1956	0.5	0.10
103 T.C.	Moon River Revision.....	1.30	1957	.....	0.80
103 T.C.	MacDonald River to Muskoka River.....	6.6	1956	5.6	1.00

Secondary Highways

518	Christie Road from Highway 69 to Orrville (day labour).....	12.00	1955	1.3	.70
500	Gooderham Diversion	1.00	1956	.75	.25
500	1.5 mi. west of Gooderham to 3.9 mi. west (day labour).....	2.40	1957	.....	2.40
532	Broad River to 1.75 mi. east of Broad River (day labour).....	1.75	1957	.....	.50
500	1 mi. east of Wilberforce to 1 mi. west of Wilberforce.....	1.9	1956	0.7	1.20
TOTALS		57.01	1956	8.85	24.15

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
500	Vicinity of Gooderham.....	3.5	1957	3.5	21,000

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	Parkersville to Huntsville.....	9.8	1956	9.8	144,468
69 T.C.	Carling Turn to Pointe-au-Baril.....	2.1	1957	2.1	22,500

Secondary Highways

518	Highway 11 to Sprucedale.....	4.0	1957	4.0	34,500
519	Haliburton to Junction Hwy. 121.....	4.0	1957	4.0	18,000
TOTALS.....		19.9		19.9	219,468

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
69 T.C.	Hayes Corners to Nobel.....	20	10,000
69 T.C.	Carling Turn to Bayfield Inlet Rd.....	22.5	20,000
124	McKellar to Ahmic Harbour.....	15.0	10,000
35	Dwight to Dorset.....	10.0	10,000
118	Dorset to Baysville.....	17.0	15,000
103 T.C.	Vicinity of Port Severn.....	4.0	1,500

Secondary Highways

532	Hayes Corners to 2 mi. west of Rosseau.....	10.0	10,000
530	Carnarvon to Jct. with S. R. 519.....	12.3	7,450
519	Haliburton to Jct. with Hwy. 121.....	21.1	12,500
500	Vicinity of Gooderham.....	3.5	7,000
501	Port Severn to Honey Harbour.....	9.0	3,500
TOTALS.....		144.4	106,950

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
Old 11	Novar, south Jct. New 11 (Orillia) to Emsdale north Jct. 11 (Orillia).....	15.6	279
11	Crown Hill to North Bay District Boundary.....	101.5	1,777
12 T.C.	Atherley Narrows to Midland.....	35.0	440
35	Hwy. 60 to Victoria County Boundary.....	57.4	3,108
60	Hwy. 11 to Algonquin Park, H.Q.....	41.8	6,210
69 T.C.	Gravenhurst to Sec. Rd. 529 at Bayfield.....	87.4	15,210
Old 69	Gordon Bay to Muskoka District Boundary.....	2.5	6
103 T.C.	Hwy. 69 (Footes Bay) to Hwy. 12.....	31.7	3,032
118	Port Carling to Dorset.....	50.3	1,495
121	Kinmount, Hwy. 35 to Hwy. 35 (Minden) Tory Hill.....	39.9	1,415
124	Hwy. 69 (Parry Sound) to Jct. Sec. Rd. 510.....	37.3	3,521
	Orillia Clover Leaf.....	2.1	12



Zone striping on Highway 11, north of Novar, indicate sufficient visibility to permit passing by vehicles using the right-hand lane, Huntsville District.

Secondary Highways

Hwy. No.		Total Miles 1957-58	Tons Placed 1957-58
500	Kinmount to 5 mi. east Highland Grove.....	48.0	11,709
501	Port Severn to Honey Harbour.....	9.2	3,571
514	Hwy. 60 to Interlaken.....	10.0	3,555
516	Hwy. 11 to Windermere.....	15.7	570
518	Hwy. 69 to Kearney.....	47.0	9,339
519	Redstone Lake to Haliburton, Hwy. 121.....	33.6	1,246
520	Dunchurch to Ardbeg at Jct. Hwy. 124.....	33.5	2,850
525	Gravenhurst to Gravenhurst Sanitorium.....	1.8	108
527	Huntsville to Baysville.....	14.9	1,062
530	Hwy. 35 (Carnarvon) to Sec. Hwy. 519.....	12.3	2,334
532	Hwy. 69 (Hayes Corners) to Hwy. 11 Muskoka Falls.....	44.5	1,574
529	Hwy. 69 to Bayfield Wharf.....	2.8	6
TOTALS.....		775.8	74,429

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	Gravenhurst to Bracebridge.....	10	1957	10	36,372
11	Bracebridge to Parkersville.....	11.3	1957	11.3	35,488
11	Parkersville to Huntsville.....	9.8	1956	9.8	36,995
TOTALS.....		31.1		31.1	108,856

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles (Compl. 1957-58	Tons Placed 1957-58
35	Horsekiller Hill.....	0.6	0.6	900
60	10 mi. east of Jct. Hwys. 35 and 60.....	0.3	0.3	450
121	Furnace Falls.....	0.2	0.2	300
124	4 mi. west of Hwy. 11 to 6.6 mi. west of Hwy. 11.....	2.6	2.6	3,900
	TOTALS.....	3.7	3.7	5,550

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
69 T.C.	Carling Turn to Bayfield Inlet Road.....	24.0	65,280	1,831
124	McKellar to Secondary Road 510.....	23.8	64,736	1,845
121	Foxes Corners to Tory Hill.....	10.0	27,200	764
103 T.C.	Waubauskene to Port Severn.....	5.0	15,000	375

Secondary Highways

501	Port Severn to Honey Harbour.....	9.2	27,600	690
526	Highway 69 to Britt.....	2.5	6,800	191
518	Highway 69 to Orrville.....	12.0	32,640	915
518	Highway 11 to 2 mi. west of Sprucedale.....	11.0	29,920	838
532	Highway 69 to 2 mi. west of Rosseau.....	10.0	27,200	764
520	Dunchurch to Ardbeg.....	16.5	44,880	1,259
520	Magnetawan to Highway 124.....	1.9	5,158	146
529	Highway 69 to Bayfield.....	3.0	8,160	230
500	Irondale to Hasting County Boundary.....	38.8	105,536	2,960
519	Eagle Lake to Redstone Lake.....	4.1	11,152	305
519	1.5 mi. south of Haliburton to Highway 121.....	19.4	52,768	1,480
530	Carnarvon to Secondary Road 519.....	12.1	32,912	897
	TOTALS.....	203.2	556,952	15,490

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles (Compl.) 1957-58	Tons Placed 1957-58
35	Dorset to Dwight.....	6.1	9,150
60	Highway 35 to Prov. Park Headquarters	2.7	4,050
118	Baysville to Dorset.....	8.65	12,975

Secondary Highways

520	Magnetawan to 3 mi. east of Magnetawan.....	3.0	4,500
	TOTALS	20.45	30,675

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
35	Dorset to Boshkung Lake.....	10.0	24,600	1,100
118	Bracebridge to Port Carling.....	5.0	12,300	550

Secondary Highways

516	Utterson to Windermere.....	16.0	39,360	1,760
527	Huntsville to Baysville.....	15.0	36,884	1,648
	TOTALS.....	46.0	113,144	5,058

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
12 T.C.	South Orillia Underpass, Jct. Hwy. 11 and 12 By-passes	1957	.....	Precast concrete beam
11	C.P.R. Overhead north of Orillia.....	1957	.....	Concrete arch
103 T.C.	Matchedash Bay Bridge, Twp. of Tay, Lot 10, Con. 11.....	1957	.....	Steel beam
103 T.C.	C.N.R. Overhead, Waubauskene.....	1957	.....	Concrete arch
103 T.C.	Muskoka River Bridge, Twp. of Gibson, Lot 15, Con. 10.....	1957	.....	Steel beam
103	Gibson River Bridge, Twp. of Gibson, Lot 20, Con. 5.....	1957	1957	Concrete arch
11	Vernon Narrows Bridge, Twp. of Chaffey, Lot 9, Con. 2.....	1957	.....	Steel beam
11	C.N.R. Overhead north of Huntsville, Twp. of Chaffey, Lot 12, Con. 3.....	1957	.....	Steel beam
11	Big East River Bridge, Twp. of Chaffey, Lot 18, Con. 7.....	1957	.....	Steel beam
35	Dorset Bridge, Twp. of Sherborne, Lot 30, Con. A.....	1957	.....	Steel beam
118	Baysville Bridge, Twp. of McLean, Lot 16, Con. 7.....	1957	.....	Steel beam

New Buildings

Hwy. No.	Location	Purpose of Building
11	Forest Home — Pt. Lot 12, Conc. 2, Twp. of South Orillia.....	Salt storage shed
12 T.C.	Coldwater — Pt. Lot 1, Conc. 11, Twp. of Tay.....	Salt storage shed

Totals of Other Work Done on District No. 11

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	429.5	267.1
Off-road parks maintained.....	3	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	502.8
Roads snowplowed and kept open, secondary highways.....	.....	.....	273.0
Roadside picnic places maintained.....	56	.....	.....
Routine maintenance, King's Highways.....	.....	.....	502.8
Routine maintenance, secondary highways.....	.....	.....	273.0
Salt for de-icing roads (raw).....	.....	3,908.0	.....
Salt in sand, stockpiled.....	.....	3,056.90	.....
Sand for winter maintenance.....	.....	79,658	.....
Scale houses maintained.....	2	.....	.....
Seeding by Department's forces.....(sq. yds.)	556,600	.....	.....
Signs erected or replaced.....	5,545	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	70.14
Weed control.....	.....	.....	596
Zone painting on King's Highways.....(gals.)	6,488	.....	417
Zone painting on secondary highways.....(gals.)	1,671	.....	102.5

DISTRICT No. 13—NORTH BAY**J.D. FOSTER, District Engineer****Construction**

In this fiscal year, the North Bay District had several grading contracts, a structure contract, a hot-mix contract and numerous day labour projects such as clearing, grubbing, grading, seeding and bridge construction and repair, as well as placing mulch pavement and surface treating.

A grading and hot-mix contract was completed on Hwy. 17 from Petawawa to Chalk River and a grading contract was started from North Bay easterly seven miles. Also on Hwy. 17 a grading and hot-mix contract was started just west of Mattawa which is a revision to the highway to avoid a steep hill and construct the road to modern standards. On Hwy. 11 the Wasi River Bridge was completed. On Hwy. 64, from Rutter to Alban, a grading contract was completed which now eliminates the previous poor alignment, grades and the sub-standard road.

The mining access road from Secondary Hwy. 533 north of Mattawa to Hwy. 63, near Temiskaming, was completed and opened to traffic. This road was constructed by Department of Highway's forces on behalf of the Department of Mines.

Maintenance

Five miles of mulch paving was laid on Secondary Hwy. 522 and five miles on Hwy. 64 using a mixing plant and D.H.O. forces. Five miles of granular base was placed on Secondary Hwy. 522 and five miles on Hwy. 64 by District forces under the maintenance section. Fifty-two miles of prime dust layer and thirty miles of liquid calcium was applied by contract. Regular patrol maintenance was carried out on all patrols in addition to work resulting from considerable damage to culverts, roadway and shoulders caused by Hurricane Audrey. The bridge over Sparks Creek, one mile west of Rutherglen on Hwy. 17, was seriously damaged on August 24, 1957, a single lane Bailey bridge was placed over existing structure and is still in use. A sand screening plant was attached to this District and 40,000 cu. yds. of winter sand was screened by District forces. This plant has proved to be most efficient.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
17	Petawawa Camp to Chalk River.....	9.25	1956	.....	9.25
64	Alban to Rutter.....	1.9	1956	.....	1.9
TOTALS		11.15			11.15

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17 T.C.	Petawawa Camp to Chalk River.....	9.25	1956	9.25	94,419
64	Alban to Rutter.....	1.9	1956	1.9	64,170
	TOTALS.....	11.15		11.15	158,589

Granular Base Laid where No Grading was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	4 mi. south of Trout Creek to 4.3 mi. south south of Trout Creek.....	0.3	1957	0.3	13,500
64	Crystal Falls to 5 mi. north.....	5.0	1958	5.0	41,040
64	Verner.....				969
522	Arnstein east.....	5.0	1958	5.0	33,433
535	Hagar to St. Charles.....	0.5	1958	0.5	17,402
	TOTALS.....	10.8		10.8	106,344

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
17	Petawawa Camp to Chalk River.....	11.0	10,000
64	Alban to Rutter.....	1.9	20,200
64	Noelville to Rutter.....		20,999
64	Crystall Falls to Holdridge Creek.....		10,000
64	Noelville to 12 mi. north.....	12.0	10,000
64	Verner.....		15,000
522	Trout Creek to Arnstein.....	25.0	9,999
522	Farley's Corners to Veuve River.....	32.0	10,000
534	Powassan to Restoule.....	20.0	10,000
535	Noelville to Veuve River.....	32.0	14,998
539	Verner.....		5,086
539	Warran to River Valley.....		9,914
	TOTALS.....	101.9	146,196

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
11	Burks Falls to Timagami.....	119	1,027
17	Pembroke to Hagar.....	179	5,555
63	North Bay to Temiskaming.....	40	98
64	Rutter to Martin River.....	85	19,027
94	Hwy. 17 to Callander.....	7	40

Secondary Highways

522	Trout Creek to Loring.....	38	13,068
534	Powassan to Restoule.....	23	4,931
535	Veuve River to Noelville.....	31	3,679
539	Warren to Field.....	26	611
510	Hwy. 11 to Magnetawan.....	15	582
700	Hwy. 11 (Airport Rd.) to Airport.....	6	7
	TOTALS.....	569	48,627

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17	Hwy. 17 to Allumette Island.....	1.1	1956	1.1	3,401
	Petawawa Camp to Chalk River.....	11.0	1957	11.0	25,057
	TOTALS.....	12.1		12.1	28,458

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
11	Wasi bridge.....	0.2	0.2	1,000
64	Sturgeon Falls to Crystal Falls intersection.....	5.2	5.2	8,700
522	5 mi. east of Loring to 10 mi. east of Loring.....	5.0	5.0	9,000
	TOTALS.....	10.4	10.4	18,700

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
64	Crystal Falls intersection to 20 mi. north.....	20.0	67,809	1,625
534	Powassan to Restoule.....	21.0	64,850	1,609
539	Field to River Valley.....	10.0	29,386	815.5
	TOTALS.....	51.0	162,045	4,049.5



Culvert construction and grading — Highway 64 at the Murdock River, North Bay District.

Bituminous Surface Treatment

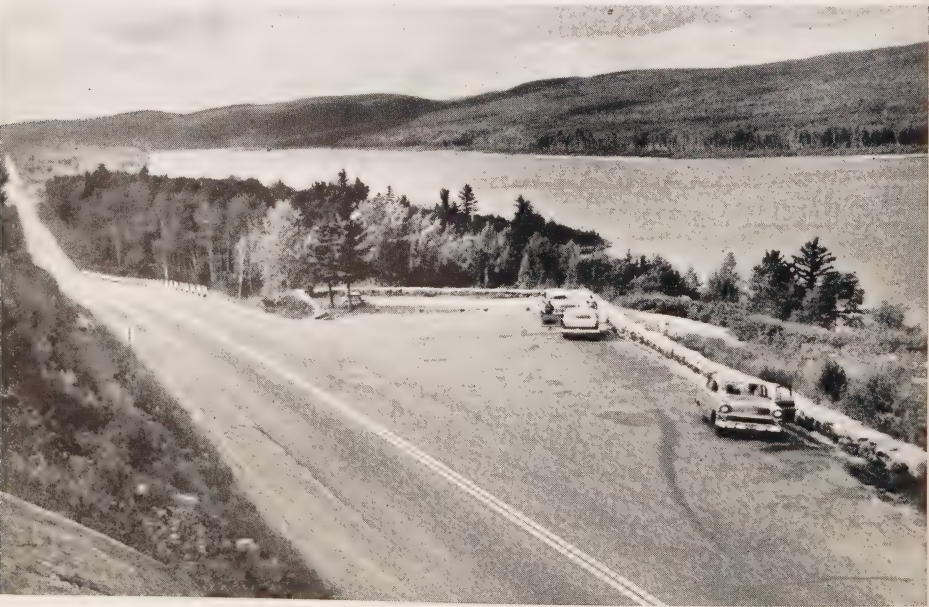
Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Chips Used
11	Powassan to Trout Creek.....	7.2	20,204	976.00
11	Powassan by-pass.....	4.0	13,382	568.35
TOTALS.....		11.2	33,586	1,544.35

Bridges Built

Hwy. No.	Location	Type of Bridge or Structure
11	Wasi bridge, 1 mi. south of Callander.....	Concrete, rigid frame

Totals of Other Work Done on District No. 13

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	1,074.75	149.95
Calcium for de-icing roads.....	.....	16.2	.....
Off-road parks maintained.....	4	.....	.....
Roads snowplowed and kept open, King's Highways.....	6	.....	443
Roads snowplowed and kept open, Secondary Highways.....	11	.....	186
Roadside picnic places maintained.....	51	.....	.....
Routine maintenance, King's Highways.....	.....	.....	443
Routine maintenance, Secondary Highways.....	.....	.....	186
Salt for de-icing roads (raw).....	.....	4,296	443
Salt in sand, stockpiled.....	.....	2,300	.....
Sand for winter maintenance.....	.....	45,042	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	629,200	.....	.....
Signs erected or replaced.....	3,080	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	52
Traffic lights installed this year.....	1	.....	.....
Weed control.....	.....	.....	183.3
Zone painting on King's Highways.....(gals.)	4,095	.....	310.1
Zone painting on secondary highways.....(gals.)	525	.....	31.9



Tourist Observation Post near Des Joachims on Highway 17, North Bay District.

DISTRICT No. 14—NEW LISKEARD**R. S. CHAPMAN, District Engineer****Construction**

The paving and shouldering on Hwy. 11 from New Liskeard northerly nine miles and on Hwy. 112 from Hwy. 11 to 66 was completed in 1957. Extensive frost treatment work was included in the work on Hwy. 112 and the results appear to be satisfactory.

Hwy. 66 from Hwy. 11 to Kirkland Lake, graded during 1956 and 1957, was paved and completed during 1957.

The grading of a new location for Hwy. 11 from Matheson northerly was completed in 1957 and is to be paved in 1958.

The extension of Hwy. 101 from 39 miles east of Matheson easterly to the Quebec Border was started during 1957. This work is relatively heavy grading and the nine mile contract was approximately sixty percent completed during fiscal year 1957-8. Also on Highway 101 the Mattawasaga Bridge, approximately 43 miles east of Matheson, was completed.

The Amikougami Bridge, a pre-stressed structure on Hwy. 66 at Swastika, was completed and opened for traffic on January 28, 1958.

On Secondary Hwy. 572 the Black River Bridge and approaches were completed and opened for traffic in October 1957.

Maintenance

The spring of 1957 was drier than normal; frost damage to roads was slight.

On June 28 and 29 Hurricane Audrey caused damage amounting to \$45,000 in the section of the District south of the height-of-land.

Mulch pavement was extended another 11 miles west from Timmins on Hwy. 101 to Star Lake.

Dust-laying with calcium chloride in brine was used on 50 miles of road as an experiment and proved most satisfactory. This was done by contract. The brine is applied to the road under pressure.

The mining access road from Secondary Hwy. 616 to Foleyet, a distance of 12 miles, was completed and opened to traffic in late July. This road was constructed by Department of Highway's forces.

A mild spell before Christmas melted much of the earlier snow and necessitated extensive salting and sanding due to water freezing on the roads at night. Otherwise the winter was normal, with generally light snowfall. No severe snow storms and no sleet were experienced.



Highway 65, twenty-four miles west of New Liskeard, showing the arch type culvert, New Liskeard District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
11	New Liskeard north.....	8.30	1957	.....	8.30
11	Matheson north.....	9.20	1956	4.0	9.20
66	Kirkland Lake, Hwy. 11.....	7.65	1955	7.1	7.65
101	Quebec Border west.....	8.20	1957	.....	2.00
101	Pamour revision.....	1.20	1957	.....	1.20
112	Jct. of Hwy. 11 to Hwy. 66.....	12.30	1957	.....	12.30

Secondary Highway

572	Black River bridge.....	1.00	1957	.....	1.00
TOTALS.....		47.85		11.1	41.65

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
11	Matheson north.....	9.20	1956	.....	9.20	20,000
66	Hwy. 11 to Kirkland Lake.....	7.65	1955	4.30	3.30	40,000
66	Hwy. 11 to Kirkland Lake.....	7.65	1957	.....	7.65	14,000
66	Amikougami River.....	.15	1957	.15	.15	7,000
101	Quebec Border west.....	8.20	1957	.....	2.00	95,000
101	Mattawasaga River.....	.12	1957	.....	.12	10,000
101	Pamour revision.....	1.20	1957	.....	1.20	10,000

Secondary Highway

572	Black River bridge.....	1.00	1957	.....	1.00	20,000
TOTALS.....		35.17		4.45	24.62	216,000



Grading a revision to Highway 11 between Shillington and Monteith, New Liskeard District.

Granular Base Laid Where No Grading was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	New Liskeard north.....	8.3	1957	8.3	191,000
11	Kenogami north and south (scattered sections).....	.....	1957	.....	10,000
112	Jct. Hwy. 11 to Hwy. 66.....	12.3	1957	12.3	410,000
	TOTALS.....	20.6		20.6	611,000

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
11	Matheson to Porquis Junction.....	20	8,000
11	New Liskeard north.....	8.3	28,000
11	Matheson north.....	9.2	3,500
65	Jct. Hwy. 65 east.....	3.0	4,000
65	7 mi. west to 16 mi. west.....	9.0	20,000
66	Hwy. 11 to Kirkland Lake.....	7.65	13,000
66	Hwy. 11 to Kirkland Lake.....	7.65	17,000
67	Hwy. 101 to intersection 610.....	6.0	12,000
101	10 mi. to 19 mi. east Matheson.....	9.0	9,000
101	11 mi. to 22½ mi. west Timmins.....	11.5	25,000
101	Pamour revision.....	1.2	10,000
112	Jct. Hwy. 11 to Hwy. 66.....	12.3	44,000

Secondary Highways

560	Charlton west.....	11.0	10,000
560	Gowganda west.....	18	15,000
572	Black River bridge.....	1.0	11,000
569	9 mi. north of New Liskeard to Hwy. 11 — Heaslip.....	18	10,000
610	Jct. Hwy. 67 to Connaught.....	2.5	5,000
616	Jct. 101 to Crawford River.....	10	10,000
	TOTALS.....	165.30	254,500

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
11	Matheson to Porquis (various locations).....	20	8,200
65	7 mi. west of New Liskeard to 18 mi. west.....	11	10,500
66	Hwy. 11 at Kenogami to 7 mi. west.....	7	19,000
101	10 mi. east of Matheson to 22 mi. east.....	12	20,300

Secondary Highways

558	Haileybury to Montreal R. (various locations).....	6	6,000
560	Charlton to Westree (various locations).....	70	80,000
562	Thornloe to Hwy. 65.....	8	3,500
566	2.5 mi. west of Matachewan to 9 mi. west.....	6.5	3,300
567	Hwy. 11 at North Cobalt to Silver Centre (various locations).....	16	12,700
569	9 mi. north of New Liskeard to Hwy. 11 at Heaslip.....	17	16,000
571	Earlton to intersection 562.....	3.0	4,000
577	Hwy. 101 to Ansonville.....	15	18,300
610	Connaught.....	10	6,800
616	Jct. 101 to Palomar.....	30	14,400
TOTALS.....		231.5	223,000

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	New Liskeard north.....	8.30	1957	8.30	14,000
11	Kenogami north and south (scattered sections).....		1957		600
65	Jct. Hwys. 65 and 11 east.....	3.00	1957		3,600
66	Hwy. 11 to Krikland Lake.....	7.65	1957	7.65	22,000
112	Jct. Hwy. 11 to Hwy. 66.....	12.30	1957	12.30	43,000
TOTALS.....		31.25		28.25	83,200

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
101	11 mi. west to 22 mi. west of Timmins.....	11	11	18,000

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
65	Elk Lake to Secondary Hwy. 562.....	25	72,000	1,660
66	Hwy. 65 easterly 19 mi.....	19	49,000	1,260
TOTALS.....		44	121,000	2,920

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
65	Elk Lake to 10 mi. west.....	10	23,000	700
65	New Liskeard to 7 mi. west.....	7	21,000	420
101	Timmins to 12 mi. west.....	12	24,700	600
573	Charlton to Jct. Hwys. 11 and 112.....	11	23,000	680
TOTALS.....		40	91,700	2,400

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
66	Amikougami River.....	1957	Jan. 1958	Pre-stressed concrete
Secondary Highway				
572	Black River.....	1957	Oct. 1958	Timber trestle

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
66	O.N.R.	At Townsite of Swastika.....	X

New Buildings

Hwy. No.	Location	Purpose of Building
11	North Cobalt.....	Saltshed

Totals of Other Work Done on District No. 14

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	458	165
Roads snowplowed and kept open, King's Highways.....	6	.....	425
Roads snowplowed and kept open, Secondary Highways.....	16	.....	333
Roadside picnic places maintained.....	22	.....	.....
Routine maintenance, King's Highways.....	.....	.....	425
Routine maintenance, Secondary Highways.....	.....	.....	351
Salt for de-icing roads (raw).....	.....	3,748	370
Salt in sand, stockpiled.....	.....	965	.....
Sand for winter maintenance.....	.....	19,400	.....
Scale houses maintained.....	3	.....	.....
Seeding by department's forces.....(sq. yds.)	193,600	.....	.....
Shrubs received and planted this year.....	40	.....	.....
Signs erected or replaced.....	1,109	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	88
Snow hedges planted this year.....	.....	.....	3
Zone painting on King's Highways.....(gals.)	3,640	.....	267
Zone painting on Secondary Highways.....(gals.)	230	.....	18



The zone striping on Highway 101, east of Schumacher, marks a passing lane for upgrade traffic, New Liskeard District.

DISTRICT No. 16—COCHRANE**E. J. ORR, District Engineer****Construction**

The new bridge over the Mattagami River at Smooth Rock Falls (total length 777 feet) is nearing completion, and is expected to be open to traffic in August, 1958.

Granular base was laid on some 44 miles of the Hearst-Longlac road, completing such work on this stretch.

The Department asphalt plant laid HL4 base course between Hearst and Pagwachuan River (71 miles), the total output being about 104,000 tons.

During the winter, the plant organization was engaged in clearing, grading and granular work on the Hornepayne access road and constructed some 18 miles of new road. It is anticipated that the road will be open for general use in the summer of 1958. This road is being constructed by Department of Highway's forces on behalf of the Department of Mines.

Maintenance

Very good results were experienced with seeding operations on 72 acres which were seeded and mulched. A new asphalt distributor and mobile patcher were received. However, this equipment arrived too late in the season to be of use.

The new five-bay garage at Hearst was completed in December and has proved most satisfactory. A new seven-bay district office building was completed in May, giving the District excellent office accommodation which greatly improved efficiency in all operations.

An 84-inch C.I.P. was installed on Hwy. 11 at Moonbeam Creek, and extensive repairs were made to the Kapuskasing River Bridge.

Traffic signals were installed at the Kapuskasing River Bridge and have proved efficient in handling traffic and decreasing the number of accidents on this one-way bridge.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58
11	10.5 mi. west of Cochrane to Hunta diversion.....	7.9	1956	4.5
11	2 mi. south of Driftwood to 3 mi. north of Driftwood.	4.6	1957	0.4
11	3 mi. north of Driftwood to 10 mi. east of Smooth Rock Falls.....	4.5	1957	2.5
11	East approach to west of Mattagami bridge, Smooth Rock Falls.....	0.9	1957	0.6
11	Kapuskasing to Harty.....	10.3	1958	0.2
	TOTALS.....	28.2		8.2



New pavement on Highway 11 thirty miles west of Hearst, Cochrane District.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
11	10.5 mi. west of Cochrane to Hunta diversion.....	0.5	1957	0.3	12,000
11	3.0 mi. north of Driftwood to 10 mi. east of Smooth Rock Falls.....	4.5	1957	3.5	122,000
11	East approach to west approach Mattagami bridge at Smooth Rock Falls.....	0.9	1957	0.5	22,000
	TOTALS.....	5.9		4.3	156,000

Granular Base Laid Where No Grading was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
11	10.2 mi. east of Thunder Bay boundary to 23.0 mi. east.....	12.8	1957	—	12.8	241,000
11	23.0 mi. east of Thunder Bay boundary to 34.9 mi. east.....	11.9	1957	6.0	5.9	109,000
11	30.0 mi. west of Hearst to 42.0 mi. west.....	12.0	1956	11.0	1.0	7,000
11	12.0 mi. west of Hearst to 30.0 mi. west.....	18.0	1956	8.0	10.0	155,000
11	Hearst to 12.0 mi. west.....	12.0	1957	.....	12.0	210,000
	TOTALS.....	66.7		25.00	41.7	722,000



Grading on this portion of the Hornpayne Road, one mile south of Highway 11, was done by D.H.O. forces, Cochrane District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
11	10 mi. west of Cochrane to 21 mi. west.....	20	8,000
11	Kapuskasing to Strickland.....	30	.....
11	Kapuskasing to Mattice.....	40	15,000
11	Hearst to Mattice.....	20	11,000
574	Cochrane to Norembega.....	18	12,000
578	Herman Lake to Montrock.....	6	4,000
579	Cochrane to Gardiner.....	18	12,000
583	Mead to Lac Ste. Therese.....	31	14,000
TOTALS.....		183	76,000

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
11	Porquis to Cochrane.....	31	1,500
11	Cochrane to Smooth Rock Falls.....	40	6,600
11	Smooth Rock Falls to Kapuskasing.....	39	400
11	Kapuskasing to Mattice.....	41	1,500
11	Mattice to Hearst.....	19	6,500
11	Hearst to Pagwachuan.....	71	500
11	Pagwachuan to Longlac.....	61	500
67	Porquis to Iroquois Falls.....	6	400
574	Cochrane to Norembega.....	18	1,000
578	Herman Lake to Montrock.....	6	300
579	Cochrane to Gardiner.....	19	1,300
583	Lac Ste. Therese to Mead.....	20	2,600
TOTALS.....		371	23,100

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. Previous Years	Miles Comp. 1957-58	Tons Placed 1957-58
11	Longlac to Hearst.....	132.0	1954	60	71.0	104,000 ¹
11	Smooth Rock Falls to 10.1 mi. east.....	10.1	1956	10	10.1	12,000 ²
TOTALS.....		142.1		70	81.1	116,000

¹ D.H.O. Asphalt Plant-Base Course only in 1957-58.

² Almost entirely top course.

Bridges Built

Hwy. No.	Location	Opened to Traffic	Type
11	Bass Creek, 6 mi. east of Kapuskasing.....	1957	Creosoted piles native timber deck.
574	Brule Creek, 3 mi. east of Cochrane.....	1957	Creosoted piles, native timber deck.

New Buildings

Hwy. No.	Location	Purpose of Building
11	Pagwa.....	Salt shed
11	Nagagami.....	Salt shed
11	Kapuskasing.....	Bunkhouse and field office
11	Hunta.....	Bunkhouse and field office
11	Kapuskasing.....	Privie
11	Kapuskasing.....	Wash room
11	Hunta.....	Wash room
11	Hunta.....	Privie
11	Cochrane.....	District office
11	Hearst.....	Patrol equipment garage

Secondary Highways

574	Gardiner.....	Passenger shelter
67	Jct. 11 and Porquis Junction.....	Patrol shelter

Totals of Other Work Done on District No. 16

Item	Total Number	Total Tons	Total Miles
Bridges painted (hand rail only).....	1		
Calcium dust layer on gravel roads.....		777 ³ / ₄	153.25
Calcium for de-icing roads.....		51 ¹ / ₄	18
Roads snowplowed and kept open, King's Highways.....	2		307.82
Roads snowplowed and kept open, Secondary Highways.....	4		71.44
Roadside picnic places maintained.....	8		
Routine maintenance, King's Highways.....			307.84
Routine maintenance, Secondary Highways.....			76.39
Salt for de-icing roads (raw).....		708	230
Salt in sand, stockpiled.....		188.8	
Sand for winter maintenance.....		5,386	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	348,480		
Signs erected or replaced.....	1,022		
Snow fence erected, dismantled, stored.....			19
Traffic lights installed this year.....	1		
Weed control.....			135 ¹ / ₂
Zone painting on King's Highways.....(gals.)	1,365		230

DISTRICT No. 17—SUDBURY**W. S. COLE, District Engineer****Construction**

Paving and Grading contracts on Hwy. 17 from Coniston to Falconbridge Road, and Wanapitei east 8.0 miles were completed.

Grading contracts were completed on Secondary Hwy. 544 from Murray Mine to Azilda, and Larchwood west for 5.8 miles.

A change in design delayed completion of Contract 56-210 in the vicinity of High Falls between Larchwood and Levack, and also the re-locating of a sewage system at the Levack C.P.R. station.

Contract 56-187 on Hwy. 68 from Sheguiandah to Ten Mile Point was completed this year with the exception of trimming.

Maintenance

New equipment received by district:— Two graders, one 5-ton truck, three 3-ton trucks, two $\frac{1}{2}$ -ton trucks, two rubber-tired loaders with 1 yd. buckets, three 6-ton trucks, five tractor loaders with mower attachments and $\frac{3}{8}$ -yd. buckets, one trailer, 1 straw mulcher and one hydryseeder, two chain saws, one tank car heater, one roller, one welder and one maintenance kettle.



Completed hot mix paving contract — Highway 17 (T.C.H.) near Spanish River, Sudbury District.

Five miles of Secondary Hwy. 545 from Milnet south were improved, ditched and gravelled in preparation for mulch. This was done on a day labour basis. This also necessitated construction of new timber structure over Vermillion River which was done by district bridge crew.

Loach Road diversion between old Hwy. 69 and new Hwy. 69 was begun and 80 per cent completed. Some work done on day labour basis. Granular base for this hauled by the contractor after invitation bids had been called.

The drainage problem at Billings Flats on Manitoulin Island corrected by installation of 50" x 31" pipe arch. Done on a day labour basis. Extensive fencing was done on Manitoulin Island by day labour.

The old steel bridge over Spanish River on Hwy. 17 was removed, checked, reinforced and re-erected over Vermillion River on Secondary Hwy. 549. Concrete work on abutments was done by District bridge crew. The old structure over the Vermillion River was removed by bridge crew.

The Bailey bridge at Espanola was strengthened by bridge crew. This bridge is on Hwy. 68 over Spanish River. District bridge crew successfully removed Bailey bridge over French River on Hwy. 69

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
17	Coniston to Falconbridge Rd.....	4.35	1956	0.7	3.65
17	Wanapitei to 8 mi. easterly.....	7.90	1957	....	7.90
68	Sheguiandah to 10 Mile Point.....	6.60	1957	....	5.40
544	Murray Mine to Azilda.....	3.80	1956	1.4	2.40
544	Larchwood westerly.....	5.80	1956	1.3	4.50
544	Levack easterly.....	5.60	1957	....	4.80
544	At Azilda.....	0.15	1957	....	0.15
	Hwy. 69 to Wilson Transport and Loach Rd. diversion.....	0.20	1957	....	0.20

Secondary Highway

545	Milnet ½ mi. south to 5 mi. north of Capreol.....	5.00	1957	....	5.00
	Killarney to Burwash.....	42.00	1955	4.0	5.00
	TOTALS.....	81.40		7.4	39.00

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed
17	Coniston to Falconbridge.....	4.35	1957	0.7	3.65	46,993
17	Wanapitei to 8 mi. easterly.....	7.90	1957	....	7.90	192,721
68	Sheguiandah to 10 Mile Point.....	6.60	1957	....	5.40	132,364
544	Murray Mine to Azilda.....	3.80	1956	Aprx. 1.4	2.40	57,583
544	Larchwood westerly.....	5.80	1956	1.3	4.50	47,991
544	Levack easterly.....	5.60	1957	....	4.80	38,365
544	At Azilda.....	0.15	1957	....	0.15	11,580
	Hwy. 69 to Wilson Transport and Loach Rd. diversion.....	0.20	1957	....	0.20	7,998
	TOTALS.....	34.40		3.4	29.00	535,595



Grading Highway 68 one and one-half miles south of Sheguiandah, Manitoulin Island.

Granular Base Laid Where No Grading was Done

Hwy. No.	Location	Year Begun	Tons Placed 1957-58
69	T.C. At French River bridge.....	1955	2,936.1

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
17	Espanola east 15 mi.....	15.00	10,000
17	Coniston to Falconbridge Rd.....	3.65	14,612
17	Wanapitei to 8 mi. easterly.....	7.90	23,772
68	Espanola to Birch Island.....		15,000
68	10 Mile Point to South Baymouth.....	32.00	15,000
68	Sheguiandah to 10 Mile Point.....	5.40	24,499
69	Bayfield Inlet Rd. northerly to Sec. Rd. 526.....	30.70	15,000

Secondary Roads

540	Gore Bay to Meldrum Bay.....	45.00	20,000
544	Murray Mine to Azilda.....	2.40	8,000
544	Larchwood westerly.....	4.50	21,360
544	Levack easterly.....	4.80	24,501
549	Hwy. 17 to Penage Lake.....	9.00	8,000
551, 552	West Bay to Gore Bay via Mindemoya.....	35.00	25,000

TOTALS.....	195.35	224,744
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Crushed Gravel and Stone on Roads by Department's Forces

Location	Tons Placed 1957-58
Various roads in district for shoulder maintenance, washouts and patching.....	100,000



Grading contract on Secondary Highway 544 five miles south of Larchwood, Sudbury District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
17	Coniston to Falconbridge Rd.	4.35	1957	....	4.35	13,937
17	Wanapitei to 8 mi. east.....	7.90	1957	....	7.90	20,557
17 T.C.	Nairn overhead to Spanish River crossing, including approaches.....	4.33	1956	....	4.33	9,501
536	Hwy. 17 to Creighton Mine.....	3.44	1956	2.3	1.14	2,480
	TOTALS.....	20.02		2.3	17.72	46,475

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58*	Tons Sand Used 1957-58*
68	Espanola to Lewis Lake.....	23		
68	10 Mile Point to South Baymouth.....	33		

Secondary Highways

542	Hwy. 68 to Spring Bay Corner.....	36		
541	Bailey's Corner to Falconbridge Rd.....	3.6		
549	Hwy. 17 to Penage Lake.....	9		
551	West Bay to Mindemoya and Providence Bay.....	11		
	TOTALS.....	115.6	320,920	7,404

* Figures for individual sections of road not available.



This Bailey Bridge crossing the French River on Highway 69 (T.C.H.) will be dismantled for use elsewhere, now that the permanent bridge has been built, Sudbury District.

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Chips Used 1957-58
69	Hanmer to Ross' Corners and sections from Ross' Corners to McCrea Lake.....	8.2	25,350	825

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bells
17	C.P.R.	Dryden Twp.....	X
69	C.P.R.	at Byng Inlet Station.....	X

Totals of Other Work Done on District No. 17

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	935	283.0
Off-road parks maintained.....	7	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	276.4
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	268.8
Roadside picnic places maintained.....	10	.....	.....
Routine maintenance, King's Highways.....	.....	.....	276.4
Routine maintenance, Secondary Highways.....	.....	.....	284.2
Salt for de-icing roads (raw).....	.....	4,087	277.6
Salt in sand, stockpiled.....	.....	1,005	.....
Sand for winter maintenance.....	.....	15,000	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	542,080	.....	.....
Signs erected or replaced.....	6,000	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	75
Traffic lights installed this year.....	1	.....	.....
Weed control.....	.....	.....	278
Zone painting on King's Highways.....(gals.)	1,800	.....	158.3
Zone painting on Secondary Highways.....(gals.)	1,087	.....	85.2

DISTRICT No. 18—SAULT STE. MARIE**D. P. COLLINS, District Engineer****Construction**

Paving of Hwy. 108 (formerly Secondary Rd. 612) was begun and completed this year over a length of 26 miles.

Grading, granular base and paving for a length of 14.8 miles was started between Iron Bridge and Thessalon on Hwy. 17, T.C.

Grading and granular base for a length of 3.5 miles was started on the Thessalon By-pass — Hwy. 17, T.C.

Grading and granular base was started on a 9.4 mile extension of Hwy. 129 running westerly from a point seven miles south of Chapleau.

Grading and granular base was started by contract under field supervision consultants on 4.1 miles of improvement roads connecting Hwy. 108 with the Milliken, Stanleigh, Algom-Nordic and Northspan Lake Nordic uranium mines. The Department is providing administrative office supervision of this work, the costs of which are being shared by the various mines, the Improvement District and the province.

The Birch Creek Bridge on Hwy. 17, T.C., was completed and opened to traffic in November 1957.

The Aux Sauble River Bridge, the C.P.R. Overhead at Thessalon, the Thessalon River Bridge and the Montreal River Bridge all on Hwy. 17 T.C. were started this year.

Maintenance

Two new shoulder maintainers were obtained this year and were used extensively on Hwy. 17 in the vicinity of Hwy. 108 and on Hwy. 108 where heavy truck traffic necessitated a great deal of edge of pavement maintenance.

A new sand dryer and a new batch-mix asphalt plant were acquired by the District and proved very useful since stock piles had been set up in both Blind River and Sault Ste. Marie. As a great deal of patching is required the constant use of these machines has eliminated the need to purchase ready-mix asphalt.

Four new hydraulic sanders were obtained for winter sanding and salting. These were the first in this District, two being used on Hwy. 108 where the Traffic is very heavy. Hwy. 108 was paved in the fall last year and as the mild winter caused alternate conditions of melting and freezing, the new sanders were busy constantly.

A new screening plant enabled us to recover sand in adequate quantities for winter maintenance by opening to use pits which, because of their high stone content, it had previously been impractical to work.

The new maintenance kettle greatly speeded up our spray patching work. Two new low pressure boilers were bought for the District and were extensively used for heating asphalt cars and thawing out culverts.



Newly paved section of Secondary Highway 612, three miles north of Highway 17 (T.C.H.),
Sault Ste. Marie District.

Two new one-way plows for three-ton trucks were obtained and eliminated the use of heavy equipment during light snow falls. A new snowblower was used on Hwy. 17 north where it was impossible to push the snow banks back any further with the conventional plows.

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17 T.C.	Iron Bridge to Thessalon Station.....	14.8	1957		216,400
612	Hwy. 17 north, 12.7 mi.....	12.7	1957	12.7	32,459
612	From 12.7 mi. north Hwy. 17 for 13.3 mi.	13.3	1957	13.3	32,267
TOTALS.....		40.8		26.0	281,126

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Plac 1957-58
17 T.C.	Iron Bridge to Thessalon Station.....	14.8	14,400
612	From Hwy. 17 north, 12.7 mi.....	12.7	23,142
612	From 12.7 mi. north Hwy. 17 for 13.3 mi.....	13.3	18,674
129	12 mi. north of Aubrey Falls to 35 mi. north.....	23.0	
548	St. Joseph Island: 2 mi. south of Richards Landing to 2½ mi. south of Hilton Beach.....	45.6	9,000
556	Searchmont Rd.: From Hwy. 17 to Wabos.....	23.1	7,100
561	Dunns Valley Rd.: From Hwy. 17 (Bruce Mines) to Dunns Valley.....	19.2	10,000
TOTALS.....		151.7	82,316

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
17 T.C. Webbwood to Agawa River.....		233	6,600
129 Thessalon to Chapleau.....		145	5,600
108 Hwy. 17 to Quirke Lake.....		26	2,700
546 White River Rd.: Iron Bridge to Mountain Lake.....		50	4,400
548 St. Joseph Island.....		45.6	5,300
555 Granary Lake Rd.: Jct. 557 to Granary Lake.....		7.1	1,500
561 Dunns Valley Rd.: Hwy. 17 (Bruce Mines) to Dunns Valley.....		19.2	825
563 Batchewana Village Rd.: Hwy. 17 to Batchewana Village.....		3.0	1,500
			1,900
			1,600
			600
TOTALS.....		528.9	52,625

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
Secondary Roads					
612 Hwy. 17 north, 12.7 mi.....		12.7	1957	12.7	30,650
612 From 12.7 mi. north to Hwy. 17 for 13.3 mi.		13.3	1957	13.3	32,511
TOTALS.....		26.0		26.0	63,161

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1957-58	Tons Placed 1957-58
129 81 mi. north of Thessalon to 104 mi. north.....		23	13	20,800
17 T.C. Webbwood to Agawa River.....		2,500
129 Thessalon to 31 mi. north of Thessalon.....		140
550 Gros Cap Rd.: Sault Ste. Marie to Gros Cap.....		200
565 Point Aux Pin Rd.: Sec. Rd. 550 to Point Aux Pin.....		70
TOTALS.....		23	13	23,710

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons Sand Used
552 White Birches Rd.: From Hwy. 17 for 5 mi.....		5.1	15,300	570
563 Batchawana Village Rd.: From Hwy. 17 to Batchawana Village.....		3.0	9,000	340
TOTALS.....		8.1	24,300	910

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used	Tons 5/8 Used
550 Gros Cap Rd.: From Sault Ste. Marie to Gros Cap....		11.3	30,000	1,130
552 White Birches Rd.: From Hwy. 17 for 5 mi.....		5.1	13,500	510
563 Batchewana Village Rd.: From Hwy. 17 to Batchewana Village.....		3.0	8,000	300
565 Point Aux Pin Rd.: From 550 to Point Aux Pin.....		3.6	9,500	360
TOTALS.....		23.0	61,000	2,300



Permanent bridge over Birch Creek — Highway 17 (T.C.) west of Webbwood —
near completion in October, 1957, Sault Ste. Marie District.

Bridges Built

Hwy. No.	Location	Type of Bridge or Structure
17 T.C.	Birch Creek, Webbwood.....	Steel girder, concrete deck

New Buildings

Hwy. No.	Location	Purpose of Building
17 T.C.	Blind River, D.H.O. Yard.....	Salt shed
108	Dunlop Lake, D.H.O. Yard.....	Salt shed
129	Hinkler Lake, Camp 36, D.H.O. Yard.....	Bunkhouse
546	1.5 mi. north of Iron Bridge.....	Equipment shelter

Totals of Other Work Done on District No. 18

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	5	.....	.....
Calcium dust layer on gravel roads.....	.....	1,100	269
Calcium for de-icing roads.....	.....	70	60
Roads snowplowed and kept open, King's Highways.....	.....	.....	379.5
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	232.6
Roadside picnic places maintained.....	15	.....	.....
Routine maintenance, King's Highways.....	.....	.....	379.5
Routine maintenance, Secondary Highways.....	.....	.....	273.6
Salt for de-icing roads (raw).....	.....	1,500	168
Salt in sand, stockpiled.....	.....	1,400	.....
Sand for winter maintenance.....	.....	12,000	.....
Scale houses maintained.....	2	.....	.....
Seeding by department's forces..... (sq. yds.)	4,840	.....	.....
Shrubs received and planted this year.....	30,000	.....	.....
Signs erected or replaced (425 sign and post, 220 replacement)	645	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	21
Weed control.....	.....	.....	46
Zone painting on King's Highways..... (gals.)	3,036	.....	275
Zone painting on Secondary Highways..... (gals.)	483	.....	42.8



Steel Erection on Little Pic River Bridge, September 1957, White River Project for Highway 17, T.C.

DISTRICT No. 19—FORT WILLIAM

J. B. GARLAND, District Engineer

Construction

Paving of the Atikokan Highway (Hwy. 120) was completed on the portion 30-45 miles east of Atikokan. The base course of pavement was laid on the completed grading from Hwy. 17 to 14.7 miles west and within this 14.7 miles a new creosoted timber structure over the Swamp River was opened to traffic.

On the Trans-Canada Hwy. 17 west of the Lakehead the following construction progress was made. A new crossing over the hydro aqueduct at Kakabeka was constructed and paved and considerable progress was made on the new crossing of the Kaministiquia River; south of Sistonen's Corners a 5.2 mile grading contract was completed and a contract for paving the same section was 90 per cent completed. Immediately west of Sistonen's Corners a 44-foot wide precast concrete structure over the Canadian National Railroad to Atikokan was opened to traffic; 7.5 miles of grading west from Shabaqua was finished and completely paved.

To the east of the Lakehead on the Trans-Canada Highway 10 miles of grading immediately west of the Red Rock Corners was completed and paved under a separate contract; considerable progress was made on the reconstruction of the 7.1 mile section between Nipigon and Red Rock which includes the Nipigon By-pass; construction was commenced on new structures at the Black Sturgeon and Black Rivers, North Trout and Stillwater Creeks, and the structural steel was erected for the bridges over the Little Pic, Steel and Prairie



Zone striping on Highway 17 (T.C.H.) four miles east of Terrace Bay, near Jackfish Lake, Fort William District.

Rivers; the 10 mile grading contract east of Marathon was finished and grading at the Pic River approaches was commenced.

A 3.75 access road to Heron Bay was constructed and opened to traffic. Mining and access roads built by the Department of Highways on behalf of the Department of Mines were opened for winter traffic from Geraldton to Nakina and from Seagram to Caramat although all construction work will not be completed until next year.

Maintenance

On Highway 11 at Long Lac 3.0 miles of slurry seal using an emulsion and a design mix was applied. The results, as shown in the spring of 1958, were discouraging.

Hwy. 17 (T-C.) from Marathon to White River was opened to winter traffic only, winter maintenance was done to the Junction of Secondary Road 614 only.

This District received a gravel crusher in October, 1957, and it proceeded to Kenora District and crushed 11,000 tons. It started to operate in the Fort William District in March, 1958, and results proved quite satisfactory.

Although the winter was mild and snowfall limited, the cost of winter maintenance did not drop because of sleet conditions, etc.

Day labour jobs were all done using D.H.O. scales on the ton-mile basis and proved very satisfactory.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
17 T.C.	Shabaqua to 7 mi. north.....	7	1955	6.6	.40
17 T.C.	Sistonen's Corners to 5 mi. south.....	5	1955	3.6	1.40
17 T.C.	Red Rock to 5 mi. westerly.....	5	1956	4.8	.20
17 T.C.	5 mi. west of Red Rock to 10 mi. westerly.....	5	1956	3.5	1.50
17 T.C.	Marathon to 10 mi. easterly.....	10	1955	8.7	1.30
17 T.C.	6 mi. east of Nipigon to 3 mi. east of Rossport.....	0.75	1956	.....	0.75
17 T.C.	Red Rock Corners to Nipigon.....	6.72	1957	.....	1.50
17 T.C.	Kakabeka Kam. river crossing to Hydro aqueducts crossing.....	1.0	1957	.....	1.00
17 T.C.	Pic River, 5 mi. east of Marathon.....	0.76	1957	.....	0.60
120	Shabaqua Corners to 7.5 mi. west.....	7.5	1955	6.3	1.20
120	Shabaqua Corners, 7.5 mi. west to 14.6 mi. west.....	7.1	1955	5.0	2.10
Access	Hwy. 17 to Heron Bay.....	3.75	1957	.....	3.75
TOTALS.....		59.58		38.5	15.70

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
17 T.C.	Shabaqua to 7 mi. north.....	7	1956	5	2.0	1,809
17 T.C.	Sistonen's Corners to 5 mi. south.....	5	1957	3.7	1.3	85,157
17 T.C.	Red Rock, 5 mi. west to 10 mi. westerly.....	5	1956	3.5	1.5	11,097
17 T.C.	Red Rock to 5 mi. westerly.....	5	1956	4.8	0.2	100
17 T.C.	Marathon to 10 mi. east.....	10	1955	4.3	5.7	27,170
17 T.C.	Kakabeka Kam. river crossing to Hydro aqueducts.....	1.0	1957	.....	0.8	58,997
120	Shabaqua to 7.5 mi. west.....	7.5	1955	5.3	2.2	25,000
120	7.5 mi. west Shabaqua to 14.8 mi. west.....	7.3	1955	4.8	2.5	24,946
TOTALS.....		47.8		31.4	16.2	234,276

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17A	6.0 mi. west of Port Arthur to Jct. 17 and 17A.....	3.0	1958	3.0	25,000

Secondary Highways

590	Jct. 590 and 595 to Jct. 590 and 588.....	15.0	1957	15.0	12,500
595	Jct. 595 and 597 to South End.....	3.0	1957	3.0	5,000
614	Manitouwadge to Jct. 17 and 614.....	40.0	1957	40.0	50,000
			1958		25,000
588	Nolalu to Jct. 17 and 588.....	35.0	1957	35.0	30,000
599	Savant Lake to Pickle Crow.....	118.0	1957	118.0	55,000
589	North End to 2.0 mi. south of North End.....	2.0	1957	2.0	10,000
TOTALS.....		216.0		216.0	212,500

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
17	Sistonen's Corners to 5 mi. south.....	5	47,155
17	Shabagua to 7 mi. north.....	5	72,297
17	Red Rock to 5 mi. west.....	2	6,792
17	5 mi. west Red Rock to 10 mi. west.....	5	47,000
17	Marathon to 10 mi. east.....	0.70	4,238
Access	Hwy. 17 to Heron Bay.....	3.75	25,230
120	Shabagua Corners to 7.5 mi. west.....	4.80	35,402
11	Beardmore to Longlac.....	Stockpile	10,500
TOTALS.....		26.25	248,614

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
17	Heron Bay to English River.....	335	20,311
11	Longlac to Nipigon.....	120	1,095
17A	Port Arthur to Jct. 17 and 17A.....	22	1,500
130	Port Arthur to Jct. 130 and 61.....	18	600
61	Fort William to International Boundary.....	40	1,062
120	Jct. 120 and 17 to Atikokan.....	90	40,234

Secondary Highways

589	Jct. 17A and 589 to north end.....	20	7,260
587	Jct. 587 and 17 to south end.....	24	5,237
585	Jct. 17 and 585 to Pine Portage.....	24	11,115
622	Jct. 622 and 120 to Caland Ore Mine.....	5	337
588	Jct. 17 and 588 to Round Lake.....	.....	4,376
590	Jct. 590 and 588 to Jct. 590 and 17.....	15	700
595	Jct. 595 and 588 to south end.....	27	750
608	Jct. 608 and 61 to Jct. 608 and 595.....	13	6,000
614	Jct. 614 and 17 to Manitouwadge.....	40	2,000
599	Savant Lake to Pickerel Crow.....	118	4,500
TOTALS.....		911	107,077

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
17 T.C.	Red Rock Corners to 10 mi. south.....	10.00	1957	.....	10.00	102,995
17 T.C.	Shabagua Corners to 7.59 mi. north.....	7.59	1957	.....	7.59	65,728
17 T.C.	Sistonen's Corners to 5.1 mi. south.....	5.10	1957	.....	4.60	49,455
120	14.8 mi. east of Atikokan to 30 mi. east.....	15.20	1956	14.3	0.90	6,019
120	30 mi. east of Atikokan to 45 mi. east.....	15.00	1957	.....	15.00	121,277
120	45 mi. east of Atikokan to Kashabowie R.....	15.25	1957	.....	2.00	7,336
120	Shabagua Corners west 14.7 mi.	14.70	1957	.....	14.70	56,365
TOTALS.....		82.84		14.3	54.79	409,178



Bailey Bridge carries traffic over Steel River while permanent structure is being built — Highway 17 (T.C.), Fort William District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gal. Bit. Used	Tons Sand Used
17 T.C.	Jackfish to Terrace Bay.....	13.0	26,000	1,365
17 T.C.	Rosspoint to Nipigon.....	50.0	100,000	5,250
17 T.C.	Ouimet to Hurkett.....	11.0	22,000	1,145
17 T.C.	7.0 mi. north of Shabaqua to 31.0 mi. north of Shabaqua.....	24.0	48,000	2,520
17A	Port Arthur to Jct. 17 and 17A.....	22.0	44,000	2,310
130	Port Arthur to Jct. 130 and 590.....	8.0	16,000	840

Secondary Highways

589	Jct. 17A and 589 to north end.....	18.0	36,000	1,890
591	Jct. 589 and 591 to north end.....	5.0	10,000	525
590	Jct. 590 and 17 to west 6.0 mi.....	6.0	12,000	630
595	Jct. 595 and 590 to Jct. 588 and 595.....	9.0	18,000	945
TOTALS.....		166.0	332,000	17,420

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Chips Used 1957-58
11	Long Lac 3.0 mi. west.....	3.0	6,000	150

New Buildings

Hwy. No.	Location	Purpose
	District Yard — Fort William.....	Stockroom
	District Yard — Fort William.....	Testing lab.
11	Beardmore.....	Patrol garage
599	Savant Lake.....	Temp. patrol garage
	Nakina Road (Murky Creek).....	Bunkhouse
	Nakina Road (Murky Creek).....	Kitchen and diner
	Nakina Road (Murky Creek).....	Office
	Nakina Road (Murky Creek).....	Utility building
17	Vicinity Black Sturgeon River.....	Bunkhouse
17	Vicinity Black Sturgeon River.....	Field office
17	Kakabeka Falls.....	Field office
120	Kashabowie.....	Bunkhouse
120	Kashabowie.....	Office and sleeping quarters
120	Kashabowie.....	Utility building
17	Cedar Creek (approx. 20 mi. east of Marathon).....	Kitchen and dining
17	Cedar Creek (approx. 20 mi. east of Marathon).....	Bunkhouse
17	Cedar Creek (approx. 20 mi. east of Marathon).....	Office
17	Cedar Creek (approx. 20 mi. east of Marathon).....	Utility building
Access	Rd. at Murky Creek (14 mi. south of Nakina).....	Office and bunkhouse
Access	Rd. at Murky Creek (14 mi. south of Nakina).....	Utility building
17	White River (O'Brien Siding).....	Office
17	White River (O'Brien Siding).....	Bunkhouse
17	White River (O'Brien Siding).....	Kitchen and dining
17	White River (O'Brien Siding).....	Utility building
17	Marathon.....	Kitchen and dining room
614	Manitouwadge Road (mi. 22).....	Kitchen and dining room
614	Manitouwadge Road (mi. 22).....	Bunkhouse
614	Manitouwadge Road (mi. 22).....	Patrol garage
120	Shebandowan.....	Asph. test lab.
	Stanley Pit (Stanley).....	Asph. test lab.
120	Kashabowie.....	Asph. test lab.
17	Still water Creek (vicinity Black Sturgeon).....	Asph. test lab.
17	Black Sturgeon Camp.....	Field office
17	North Trout Creek (vicinity Black Sturgeon).....	Insp. office
	District Yard — Fort William.....	Insp. office
	Shabaqua (Jct. 17 and 120).....	Cook's quarters
599	Savant Lake.....	Patrol garage

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type of Bridge or Structure
17 T.C.	Sistonon's overhead C.N., Jct. Hwy. 17 T.C. and 17A.....	1956	1957	Reinforced concrete, pre-cast deck
120	Swamp River, 10 mi. west of Jct. of Hwys. 17 T.C. and 120.....	1957	1957	Creosoted timber pile bridge.
599	15 mi. north of Savant Lake.....	1957	1957	Creosoted timber, on cribs
599	16½ mi. north of Savant Lake.....	1957	1957	Timber

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Miles	Type
				Flash. Lights Bell
				Short Arm Bell
17A	C.P.R.	Ware Twp., Lots 18 and 19, Con. B.....	23.33	2 Lights 1 Bell
11	C.N.R.	Leduc Twp.....	0.50	2 Lights 1 Bell
590	C.P.R.	Oliver Twp., Lots 7 and 8, Con. 1 and 3...	12.80	2 Lights 1 Bell
				2 Gates

Totals of Other Work Done on District No. 19

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	3	.....	.....
Calcium dust layer on gravel roads.....	.....	691	99
Calcium for de-icing roads.....	.....	32	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	615
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	388
Roadside picnic places maintained.....	20	.....	.....
Routine maintenance, King's Highways.....	.....	.....	615
Routine maintenance, Secondary Highways.....	.....	.....	388
Salt for de-icing roads (raw).....	.....	3,250	1,003
Salt in sand, stockpiled.....	.....	750	.....
Sand for winter maintenance.....	.....	4,000	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	1,321,320	.....	.....
Signs erected or replaced.....	2,950	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	31.1
Traffic lights installed this year.....	1	.....	.....
Weed control.....	.....	.....	478
Zone painting on King's Highways.....(gals.)	6,257	.....	529
Zone painting on Secondary Highways.....(gals.)	204	.....	17



Grading the southern approach to the relocated bridge, Highway 17 (T.C.H.) at Kakabeka Falls, Fort William District.

WHITE RIVER PROJECT

E. R. KENNY, Project Engineer

Construction

Clearing of the "Gap" was completed this fiscal year and construction was underway on 115 miles.

During the year grading was practically completed on 48 of the 55 miles of highway between Marathon and White River. East of White River, $8\frac{1}{2}$ miles were completed and 40 per cent of the next 20 miles was roughed out. North from Jamestown 10 miles was completed except for granular base, and grading was started on 6 miles to the south. North from the Agawa River 13 of 15 miles were completed except for granular base. Five bridges were started and will be completed early next fiscal year.

Winter work is a problem to most contractors, during the past winter, only four of eleven active contracts had work sufficiently heavy to carry on throughout the winter.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
17 T.C.	10 mi. east of Marathon to 21.8 mi. east of Marathon.....	11.8	1957	....	11.8
17 T.C.	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.....	12.0	1956	....	3.0
17 T.C.	33.8 mi. east of Marathon to 10.6 mi. west of White River.....	11.4	1956	....	11.4
17 T.C.	10.6 mi. west of White River to White River.....	10.6	1955	2.9	7.7
17 T.C.	White River to 8.4 mi. east of White River.....	8.4	1955	2.8	5.6
17 T.C.	8.4 mi. east of White River to 18.4 mi. east of White River.....	10.0	1957	....	4.0
17 T.C.	Wawa Road to Catfish Lake.....	10.0	1957	....	6.0
17 T.C.	Agawa River to Barrett River.....	5.0	1956	....	5.0
17 T.C.	Barrett River northerly.....	10.0	1956	....	8.0
TOTALS.....		89.0		5.7	62.5

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17	10 mi. east of Marathon to 21.8 mi. east of Marathon.....	11.8	1957	4.2	33,467
17	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.....	12.0	1957	3.0	2,917
17	33.8 mi. east of Marathon to 10.6 mi. west of White River.....	11.4	1957	9.2	93,692
17	10.6 mi. west of White River to White River.....	10.6	1956	10.6	85,884
17	White River to 8.4 mi. east of White River.....	8.4	1956	7.0	42,888
TOTALS.....		54.2		34.0	258,848



This scene, taken in October, 1957, a half mile north of the Agawa River, illustrates the swift progress being made in building this section of the Trans-Canada Highway.



Construction north of the Agawa River where the connecting link of the Trans-Canada Highway is being built through the wilderness on the eastern shore of Lake Superior.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed and Stockpiled	
			1957-58	Stock- piled
17 T.C.	10 mi. east of Marathon to 21.8 mi. east of Marathon.	4.2	47,467	14,000
17 T.C.	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.	3.0	10,361	7,444
17 T.C.	33.8 mi. east of Marathon to 10.6 mi. west of White River.....	9.2	113,061	19,369
17 T.C.	10.6 mi. west of White River to White River.....	10.6	104,986	19,102
17 T.C.	White River to 8.4 mi. east of White River.....	8.4	62,888	20,000
17 T.C.	Agawa River north for 5 mi.....	.....	36,541	35,641
TOTALS.....		35.4	375,304	116,456



Grading and paving on Highway 17 (T.C.), Kenora District.

DISTRICT No. 20—KENORA

E. H. JONES, District Engineer

Construction

The Beaver Creek bridge on the Trans-Canada Highway was built with one abutment on rock and the other abutment on 80-foot concrete-filled steel tube piles. To overcome slippage of the piles against the steep rock slope encountered, dowels were drilled and grouted into bed rock at the bottom of the piles. A load test on a completed pile was successful.

Two creosoted timber bridges were also opened this year; one located on Hwy. 71, on a small diversion near Barwick, the other on Hwy. 105.

Thirty-one miles of grading on the Trans-Canada Highway were awarded during the year.

Maintenance

Routine maintenance was carried out on 582.7 miles of King's Highways and 326.4 miles of Secondary Highway.

The completion and occupation of a new 14 bay District garage and 9 bay heated storage building at Kenora greatly improved the maintenance of equipment and handling of stock in the District.

All winter sand was screened, hauled and stockpiled by our own forces instead of by contract as was done in previous years.

An additional three miles of Secondary Highway 621 in the Bergland area was completed this year. The work, which was done by Department forces, involved ditching and granular base.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58
17 T.C.	Manitoba Boundary to 6.1 mi. easterly.....	6.1	1956	2.6	3.5
17 T.C.	5 mi. east Hwy. 105 to 5 mi. west Hwy. 105.	10.0	1957	.....	.....
17 T.C.	6.5 mi. west of Oxdrift to 13.5 mi. west of Oxdrift.....	7.0	1955	4.5	2.5
17 T.C.	7.8 mi. east Borup's Corners easterly for 8.5 mi.....	8.5	1957	.....	3.0
71	1.5 mi. west Barwick and Pinewood westerly for 3 mi.....	5.0	1956	4.0	1.0
105	7.2 mi. Vermilion Bay.....	0.3	1957	.....	0.3
TOTALS.....		36.9		11.1	10.3

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1956-57	Tons Placed 1957-58
17 T.C.	Manitoba Boundary to 6.1 mi. easterly.....	6.1	1956	1.6	4.5	138,965
17 T.C.	6.5 mi. west of Oxdrift to 13.5 mi. west of Oxdrift.....	7.0	1955	5.0	2.0	85,000
17 T.C.	Oxdrift to 13.5 mi. west.....	13.5	1956	.....	13.5	76,653
17 T.C.	Approximately 20 mi. west of Dryden.....	.....	1957	.....	.....	1,723
71	2 mi. west of Barwick.....	.....	1957	.....	.....	405
71	1.5 mi. west of Barwick and west of Pinewood, 3 mi.....	5.0	1956	3.5	1.5	4,710
105	7.2 mi. north of Vermilion Bay.....	0.3	1957	.....	0.3	11,420
105	8.5 mi. south of Red Lake.....	.....	1957	.....	.....	255
TOTALS.....		31.9		10.1	21.8	319,131

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
70	Longbow Corners to Finland....	85	1957	.....	85	5,121
71	Emo to Sleeman.....	30	1957	.....	30	762
72	Dinorwic to Patricia Corners....	22	1957	.....	22	12,626
105	Jct. Hwy. 17 to 7th base line....	48	1957	.....	48	1,500
105	7th base line to Red Lake.....	64	1957	.....	64	19,590
116	Patricia Corners to Hudson.....	10	1957	.....	10	6,336
119	Jct. Hwy. 17 to Richan.....	13	1957	.....	13	4,650
125	Jct. Hwy. 105 to Cochenour....	8	1957	.....	8	2,900
128	Kenora to Redditt.....	18	1957	.....	18	11,352

Development Roads

594	Dryden to Eagle River Road....	22	1957	.....	22	5,997
600	Harris Hill to Blackhawk.....	44	1957	.....	44	3,072
601	Dryden to Rice Lake Loop.....	16	1957	.....	16	1,476
602	Fort Frances to Emo.....	30	1957	.....	30	4,327
605	Eton Rugby Road.....	7	1957	.....	7	942
609	Quibell to Clay Lake Road.....	10	1957	.....	10	150
613	Devlin Road.....	25	1957	.....	25	7,332
615	Blackhawk to Clearwater Lake....	16	1957	.....	16	2,880
619	Arbor Vitae road.....	24	1957	.....	24	1,676
621	Sleeman Morson road.....	33	1957	.....	33	452
621	Sleeman Morson road.....	19	1955	15	4	16,764
623	Rainy River to Harris Hill.....	13	1957	.....	13	190
TOTALS.....		557		15	542	110,095

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1957-58	Total Tons Placed 1957-58
105	13 mi. north of Ear Falls to 13 mi. south of Ear Falls.....	26.0	14,995
105, 125	Red Lake to Cochenour.....	10.4	44,998
17, 128	Kenora to Longbow Corners to Redditt.....	32.0	14,942
17, 119	Dryden, Oxdrift, Richan.....	34.0	19,999
619	Pinewood north 14 mi.....	14.0	10,000
17	Manitoba Boundary to 6.1 mi. easterly.....	6.1	64,980
17	6.5 mi. west of Oxdrift to 13.5 mi. west of Oxdrift.....	7.0	63,600
17	Oxdrift to 13.5 mi. west.....	13.5	17,022
17	7.8 mi. east of Borup's Corners easterly 8.5 mi.....	8.5	10,300
105	7.2 mi. north of Vermilion Bay.....	0.3	1,995
105	8.5 mi. south of Red Lake.....		180
71	1.5 mi. west of Barwick and west of Pinewood 3 mi.....	5.0	3,154
17	5 mi. east Hwy. 105, 5 mi. west Hwy. 105.....	10.0	9,980
TOTALS.....		166.8	276,147

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1957-58	Tons Placed 1957-58
17	Raleigh Falls to English River.....	53	594
17	Kenora to Wabigoon.....	102	7,923
70	Longbow Corners to Nestor Falls.....	64	2,364
71	Stratton to Rainy River.....	22	787
72	Dinorwic to Patricia Corners.....	38	7,508
105	Jct. 17 and 105 to Red Lake.....	112	7,149
116	Patricia Corners to Hudson.....	10	2,301
119	Dryden to Richan.....	13	360
125	Jct. 105 to Cochenour.....	8	250
128	Kenora to Redditt.....	18	1,752

Secondary Highways

594	South Aubrey road.....	22	678
600	Harr's Hill to Blackhawk.....	44	968
613	Devlin road.....	25	1,492
615	Clearwater Lake road.....	16	1,848
617	Stratton north branch road.....	14	1,275
618	Red Lake to Madsen road.....	7	1,080
619	Arbor Vitae road.....	25	1,563
621	Sleeman Morson road.....	33	1,268
TOTALS.....		626	41,160

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. 1957-58	Tons Placed 1957-58
17	Oxdrift to 13.0 mi. west.....	13	1957	13.0	31,471

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1957-58	Tons Placed 1957-58
70, 71	Sioux Narrows to 4.6 mi. south Jct. Hwys. 70 and 71 1 mi. west.....	5.1	....	5.1	5,548
72	2.1 mi. south of Sioux Lookout to Patricia Corners.....	5.0	2.1	2.9	3,906
105, 125	Red Lake to Cochenour.....	10.0	....	4.0	4,552
TOTALS.....		20.1	2.1	12.0	14,006



Day Labour project on Highway 119 two and one-half miles north of Highway 17 (T.C.H.),
Kenora District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1957-58	Gals. Bit. Used 1957-58	Tons Sand Used 1957-58
17	George Lake to Vermilion Bay (various sections).....	4.0	15,153	160
602	Emo, south 1.2 mi.....	1.2	4,400	177
621	Sleeman, north 16 mi.....	16.0	49,152	2,034
71	1.5 mi. west of Barwick and west of Pinewood, 3 mi.....	5.0	15,178	553
17	Oxdrift to 13.5 mi. west.....	13.5	58,082	1,683
TOTALS.....		39.7	141,965	4,607

Bridges Built

Hwy. No.	Location	Type
17 T.C.	Beaver Creek, approximately 20 mi. west of Dryden.....	Steel and concrete
105	Bueller Creek, 7.2 mi. north of Vermilion Bay.....	Timber pile, concrete deck
71	Sturgeon River, 2 mi. west of Barwick.....	Timber pile, concrete deck
335	Olmstead bridge, 0.5 mi. east of Burriss.....	Timber crib, laminated deck

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type of Project	
			Flash. Lights, Bell	Short Arm Bell
17	C.P.R.	Southworth Twp., Lot. 8, Con. 5.....	2 Flash. Light Signals	2 Short Arm Gates, 1 Bell
105	C.N.R.	Redvers Twp., Lot. 2, Con. 1.....	2 Flash. Light Signals, 1 Bell	



Department of Highways' sign welcoming visitors at the Manitoba boundary, Highway 17 (T.C.H.), Kenora District.

New Buildings

Hwy. No.	Location	Purpose
17	4 mi. east of Kenora.....	Garage
17	4 mi. east of Kenora.....	Heated storage
17	4 mi. east of Kenora.....	Temporary carpenter and paint shop

Totals of Other Work Done on District No. 20

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	1,237	584
Calcium for de-icing roads.....	.....	38	65
Off-road parks maintained.....	3	.....	.....
Roads snowplowed and kept open, King's Highways.....	9	.....	582.7
Roads snowplowed and kept open, Secondary Highways.....	19	.....	326.4
Roadside picnic places maintained.....	12	.....	.....
Routine maintenance, King's Highways.....	.....	.....	582.7
Routine maintenance, Secondary Highways.....	.....	.....	326.4
Salt for de-icing roads (raw).....	.....	707	325
Salt in sand, stockpiled.....	.....	1,769	.....
Sand for winter maintenance.....	.....	37,396	.....
Scale houses maintained.....	4	.....	.....
Seeding by department's forces.....(sq. yds.)	459,800	.....	.....
Shrubs received and planted this year.....	21,300	.....	.....
Signs erected or replaced.....	1,605	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	80
Snow hedges planted this year.....	.....	.....	28
Traffic lights installed this year.....	2	.....	.....
Zone painting on King's Highways.....(gals.)	3,611	.....	296.9
Zone painting on Secondary Highways.....(gals.)	43	.....	2.5

PLANNING AND DESIGN BRANCH

JOHN WALTER, *Director of Planning and Design*

PLANNING DIVISION

K. H. Siddall
Planning Engineer

DESIGN DIVISION

D. G. Ramsay
Road Design Engineer

The following reports of Sections and Subsections deal with the activities of the Planning and Design Branch, Department of Highways, for the fiscal year ending March 31, 1958.

LOCATION SECTION

H. A. MANTLE, *Location Engineer*

Location Plans and Field Staff Subsections

The report of the Field Section and the Location Plans Section has been broken down into 5 groups for each District as of March 31, 1958, as follows:

- (a) Field work in progress as of March 31, 1958.
- (b) Drafting work completed, office drafting in progress March 31, 1958.
- (c) Drafting completed, design work in progress March 31, 1958.
- (d) Design work completed (including structures processed).
- (e) As-constructed work completed.

District	Field Work in Progress	Field Work Completed	Drafting Completed	Design Completed	As Constructed
Chatham.....	.....	98.9	30.3	40.8	3.5
London.....	24.5	55.6	10.9	85.2	4.0
Stratford.....	.....	24.1	.....	34.1	50.0
Hamilton.....	26.7	62.7	.....	51.4	.....
Owen Sound.....	33.5	26.8	.....	91.0	52.0
Toronto.....	22.6	4.5	19.6	25.6	.....
Port Hope.....	40.0	61.5	22.9	51.5	.....
Kingston.....	30.3	53.0	19.7	117.1	.....
Ottawa.....	76.6	32.5	.....	41.3	.....
Bancroft.....	.....	37.3	57.7	49.8	.....
Huntsville.....	7.6	66.4	76.2	75.9	.....
North Bay.....	12.0	36.6	1.2	44.8	.....
New Liskeard.....	.....	.....	.....	19.2	.....
Cochrane.....	.....	14.6	.....	20.0	.....
Sudbury.....	.....	37.9	.....	48.7	.....
Sault Ste. Marie.....	38.0	.....	74.4	49.7	.....
Fort William.....	12.7	.....	.....	71.6	.....
Kenora.....	.....	.....	.....	52.3	.....
White River.....	.....	.....	.....	.....	.....
TOTALS.....	324.5	612.4	312.9	970.0	109.5



Overpass crossing N.Y.C. tracks — Highway 401, Chatham District.

TRANS-CANADA

	Field Work in Progress	Field Work Completed	Drafting Completed	Design Completed
Port Hope		25.1		3.3
Kingston.....	14.6	15.1		17.0
Ottawa.....				3.7
Huntsville.....				1.5
Sudbury.....		13.3		18.6
Sault Ste. Marie.....	38.0		74.4	15.0
Fort William	12.7			68.1
Kenora.....				22.8
White River.....				
TOTALS.....	65.3	53.5	74.4	150.0

Also 30 Bridge Site Plans and 5 Railway Board Plans.

DISTRICT No. 1—CHATHAM

Field Work Completed—Drafting in Progress

Hwy.	Location	Mileage
2	Mosa Twp. Bdy. to Chatham.....	16.3
2	Chatham to Tilbury.....	15.0
3 B	Windsor (W.P. 5-58).....	4.2
3	Leamington to Essex.....	7.0
7	Ailsa Craig to Arkona (W.P. 6-58).....	8.4
21	Hwy. 82 to Grand Bend.....	9.5
98	Tilbury to Comber.....	6.3
107	Ruthven South.....	1.0
Dev. Rd.	Alvinston to Courtwright.....	31.2

Drafting Work Completed

2	Thamesville East (W.P. 191-57).....	8.4
40	Wallaceburg to Sarnia.....	21.9

Design Work Completed

Hwy.	Location	W.P.	Mileage
7	Parkhill Curves.....	190-57	1.0
18	Amherstburg Div.....	183-57	1.0
40	Wallaceburg North.....	219-57	7.3
82	Hwy. 7 to Hwy. 21.....		6.8

CHATHAM DISTRICT—(Cont'd)**Design Work Completed**

81	Parkhill.....	219-57	1.0
98	Charing Cross to Merlin.....	150-57	23.7
98	Merlin to Tilbury.....	188-57	
98	Tilbury to Comber.....	188-57	

Miscellaneous Plans**BRIDGE SITE PLANS**

Hwy.	Location
40	Running Creek (2)
40	Whitebread Drain (2)
40	Clay Creek
40	Talford Creek
98	Baptiste Creek
98	Tilbury Creek

RAILWAY BOARD PLANS

39	C.N.R. (Belle River to Windsor)
Dev. Rd.	Michigan Central (Alvinston to Courtright)

As Constructed

Cont. 53-396

Hwy.	Location	Mileage
79	Watford to Hwy. 7	3.5

DISTRICT No. 2—LONDON**Field Work in Progress**

Hwy.	Location	Mileage
Proposed	St. Thomas By-Pass.....	6.0
74	New Sarum to Belmont	7.1
76	Hwy. 3 to Hwy. 2.....	11.4

Field Work Complete—Drafting in Progress

2	Strathburn West.....	11.2
24	Brantford to Osborne Corners.....	3.5
7	Ailsa Craig to Arkona (W.P. 6-58).....	6.6
59	Delhi to Woodstock.....	22.9
74	Belmont to Nilestown.....	6.7
97	Bridge Site, Nith River at Plattsville.....	.....
Highbury		
Rd. Ext.	London City Limits to C.A.H. 401.....	2.7
Cty. Rd.	Hwy. 3 north at St. Thomas.....	2.0

Drafting Work Completed

3	Orwell to St. Thomas (W.P. 100-55).....	8.8
3	West entrance of St. Thomas (W.P. 210-57).....	2.1

Miscellaneous Plans**BRIDGE SITE PLANS**

Hwy.	Location
Cty. Rd.	Big Creek
Dev. Rd.	Big Otter Cr. Line A } W.P. 155-57
Dev. Rd.	Big Otter Cr. Line B }
Hwy. 3	Jerry's Cr.

RAILWAY BOARD PLANS

Cty. Rd.	C.N.R.
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LONDON DISTRICT—(Cont'd)**Design Work Completed**

Hwy.	Location	W.P.	Mileage
2	Delaware.....	7-57	1.5
3	Tilsonburg West.....	703-56	9.0
4	Elginfield to Exeter.....	.....	17.0
22	Highway 4 easterly.....	514-C-56	7.0
53	Brantford to Eastwood.....	.....	20.8
135	From C.A.H. to Hwy. 2.....	209-57	4.3
Cty. Rd.	Port Rowan to Courtland.....	.....	19.7
Dev. Rd.	Griffin Corners to Calton.....	155-57	5.9

Bridge Prints Processed

2	Delaware (Thames).....	7-57
Calton Rd.	Big Otter Cr.....	155-57
22	Medway Cr.....	706-56
401	Norwich Rd.....	151-57
401	Whiteoaks Side Rd.....	99-57
22	Oxbow Cr.....	705-56

As Constructed

Cont. 52-76

Hwy.	Location	Mileage
2	Strathburn West.....	4.0

DISTRICT No. 3—STRATFORD**Field Work Complete—Drafting in Progress**

Hwy.	Location	Mileage
7 and 8	Kitchener West.....	6.9
24	Hwy. 51 to Orangeville (W.P. 216-57).....	7.7
100	Thamesford to St. Mary's.....	8.3
401	Hwy. 24 westerly.....	1.2
19	Br. Site at Mud Creek (W.P. 152-57).....

Drafting Work Complete—Bridge Sites

21	Heyrock Bridge at St. Joseph
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Railway Board Plan

97	C.P.R. West of Galt
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Bridge over Maitland River, one mile west of Harriston, Highway 87, Stratford District.



Centre Span, Burlington Beach Skyway, November, 1957. Hamilton District.

STRATFORD DISTRICT—(Cont'd)

Design Work Complete

Hwy.	Location	W.P.	Mileage
19	Woodstock Northerly.....	152-57	9.4
100	Thamesford North.....	760A-56	7.0
21	Grand Bend to St. Joseph.....		10.2
7	Curve Revision East of Hwy. 100.....	217-57	0.3
97	Galt Westerly.....	174-57	7.2

As Constructed

Cont.	Hwy.	Location	Mileage
52-79	83	Exeter to Brewster.....	12.0
54-15	83	Exeter to Russeldale.....	11.5
55-120			
56-45			
52-62	23	Elginfield to Russeldale.....	16.0
49-22	97	Hickson Easterly.....	10.5
50-145			
52-02			

DISTRICT No. 4—HAMILTON

Field Work in Progress

Hwy.	Location	Mileage
20	Fonthill West, Pelham Twp.....	4.9
54	Cayuga to Caledonia.....	5.8
55	Hwy. 53 to Hamilton.....	2.0
Prop.	Freeman to Hwy. 5.....	3.2
Prop.	Welland to Hwy. 20.....	4.8
Prop.	Port Colborne to Welland.....	6.0

HAMILTON DISTRICT—(Cont'd)**Field Work Completed—Drafting in Progress**

3	Fort Erie to Port Colborne (Humberstone).....	8.5
8	Grimsby to St. Catharines.....	13.3
8	Niagara Falls to St. Davids Revision (W.P. 534-56)...	1.1
20	Niagara Falls to Allanburg.....	4.2
24	Port Dover to Simcoe.....	9.3
52	Hwy. 2 to Peter's Corners.....	6.7
54	Cayuga to Caledonia.....	5.7
97	Freelton to Galt.....	13.9

Design Work Completed

2 and 53	Anc. to Duff's Corners (W.P. 136-57).....	2.3
3	Fort Erie to Port Colborne (Bertie Twp.).....	10.3
6	Jarvis to Port Dover.....	6.2
20	Allanburg to Fonthill.....	6.7
25	Hwy. 5 to Milton (includes revision 732-56).....	10.9
401	Revision Hwy. 25 to Hwy. 6, (W.P. 29-57, 30-57)	12.5
Q.E.W.	Serv. Rd. Freeman Int. to Hwy. 2.....	1.2
Q.E.W.	Serv. Rd. St. Catharines, Ontario St. to Lake St. 181-57.....	1.3

Bridge Prints Processed

Hwy.	Location	W.P.
401	County Road Lot 5 Con. 4, Nassagaweya Twp.....	195-57
401	Rd. Allce. between Con. 5 and 6, Nassagaweya Twp.....	41-57
401	Oakville Cr.....	32-57
5	Oakville Cr.....	710-56
401	C.P.R. overhead, Nassagaweya Twp.....	31-57

Drafting Work Completed**Miscellaneous Plans****BRIDGE SITE PLANS**

Q.E.W.	Stoney Creek Traffic Circle
2	Creek on Clarkson to Oakville Job
2 (C.A.H.)	T.H. and B. Railway
2 (C.A.H.)	Mohawk Road
54	C.N.R. at Cayuga
401	Road Allce. Townships of Esquesing and Nassagaweya
401	Road Allce. Con. VI and Con. VII, Township of Nassagaweya

RAILWAY BOARD PLANS

Q.E.W.	C.N.R. at Stoney Creek Traffic Circle
Twp. Rd.	C.N.R. at Allanburg
2 (C.A.H.)	T.H. and B. at Hamilton
53	C.N.R. at Elfrida
54	C.N.R. at Cayuga (2)

ACCIDENT SITE PLANS

Cty. Road	Scenic Drive at Hamilton
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Grading Highway 89, three miles east of Primrose, Owen Sound District.

DISTRICT No. 5—OWEN SOUND

Field Work in Progress

Hwy.	Location	Mileage
9	Greenock Township	4.5
9	Carrick Township	6.0
89	Primrose to Cookstown	23.0

Field Work Completed—Drafting in Progress

4	Priceville Diversion	1.8
6	Miller Lake Northerly	6.1
9	Grand Valley to Arthur	12.3
10	Orangeville By-Pass	1.4
27	Midhurst to Penetanguishene	5.2

Design Completed

6	Orchard to Durham	22.7
6	Dornoch to Chatsworth	
21	Underwood to Southampton	14.3
26	Woodford to Owen Sound	10.1
10 and 24	Orangeville to Camilla (W.P. 33-57)	5.6
21	Southampton to Hwy. 6	12.7
21 and 6	Owen Sound to Hwy 6	8.7
4 and 9	Greenock to Hanover	10.9
Dev. Rd.		
384	Shelbourne to Mt. Forest (W.P. 728B-56)	6.0

Bridge Prints Processed

Hwy.	Location	W.P.
384	Mud Creek	728B-56

Constructed

Cont.	Hwy.	Location	Mileage
52-55	21	Kincardine to Underwood	12.0
54-303	10	Berkeley to Chatsworth	9.7
51-20	6 and 10	Chatsworth to Owen Sound	6.0
55-408	4	Flesherton Westerly	3.8
54-404 }	10	Shelbourne to Flesherton	20.5
54-410 }			

DISTRICT No. 6—TORONTO

Field Work in Progress

Hwy.	Location	Mileage
50	Hwy. 7 to Bolton	9.3
50	Palgrave to Hwy. 9	2.7
400	401 Northerly	3.9
400	Barrie to Crown Hill	6.7

Field Work Completed

10	Hwy. 2 to Cooksville	3.0
11	Intersection with old Hwy. 11, North of Orillia	1.5

Drafting Completed

400	Twps. Vaughan and King	19.6
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Miscellaneous Plans

BRIDGE SITE PLANS

400	Crown Hill Intersection
5	Credit River at Erindale
48	Creek at Dixon's Hill

RAILWAY BOARD PLANS

27	C.N.R. at Longbranch
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Intersection Plans

Q.E.W.	Cawthra Rd.
400	Crown Hill

Design Completed

2	Clarkson to Oakville (W.P. 139-57)	5.3
5	Cooksville Westerly	5.8
Cty. Rd.	Dixon Rd.	4.0
48	Markham to Ringwood	6.0
7	From Hwy. 400 to Hwy. 27	4.5

Bridge Prints Processed

Hwy.	Location	W.P.
Q.E.W.	Shooks Hill Interchange	714-56
400	Anne St. in Barrie	746-56
401	Streetsville Interchange	43-57
401	Rd. Allee between Trafalgar and Esquesing Twps.	40-57
401	Road Allee between Lots 10 and 11 Twp. Toronto	77-57
401	Rd. Allee between Cons. 7 and 8 Trafalgar Twp.	42-57
7	Humber River	158-57
7	Plunketts Creek	573B-56
401	Cons. III and IV Toronto	75-57
401	Meadowvale Cr.	160-57
400	Teston Side Rd.	93-57
401	Toronto-Trafalgar Twp. Line	78-57
401	Cons. IX and X Trafalgar	79-57
401	Cons. VI and VII Trafalgar	80-57
401	Oakville Cr. Tributaries	177-57
401	Rd. Allee between Con. 1 and 2 Twp. Toronto	73-57
401	Rd. Allee, between Cons. 2 and 3 Twp. Toronto	74-57
Q.E.W.	Bronte Cr. Widening	66-57
Q.E.W.	Rd. Allee, between Lots 25 and 26 Twp. Trafalgar	102-57
Q.E.W.	Rd. Allee between Lots 20 and 21 Trafalgar	156-57
Q.E.W.	Prop. Interchange West of Bronte Cr.	105-57
400	C.N.R. Overhead Innisfil Twp.	11-57
Q.E.W.	Appleby Rd.	103-57
48	Little Rouge River	47-57

DISTRICT No. 7—PORT HOPE

Field Work in Progress

Hwy.	Location	Mileage
36	Pobcaygeon to Burleigh Falls.....	23.5
Prop. 46	Kirkfield to Coboconk.....	7.0
503	Sebright to Norland.....	9.5

Field Work Completed

7	Peterborough to Marmora.....	20.8
12	Gamebridge Revision.....	4.3
30	Brighton to Havelock.....	31.8
Cty. Rd.	Trenton, Linking Hwy. 33 to Hwy. 401.....	3.6
Cty. Rd.	West of Trenton.....	1.0

Drafting Completed

Proposed 12	Beaverton By-pass.....	7.0
14	Crofton to Bloomfield.....	5.1
33	Glenora to Wellington.....	10.8

Design Completed

33	Bloomfield to Wellington (W.P. 579-56).....	5.7
41	Coles Ferry to Picton (W.P. 178-57).....	3.3
401	Service Rds. from Brighton to Newcastle.....	2.2
503	Sebright to Norland.....	4.8
401	Hwy. 28 to Hwy. 30 (W.P. 111-57, 114-57, 127-57, 118-57, 122-57).....	27.8
133	Jackson's Creek to Fowlers Cors. (W.P. 2-57).....	3.3
115	Hwy. 28 to Peterboro (W.P. 36-57).....	4.4

Bridge Prints Processed

Hwy.	Location	W.P.
401	Morrish Road.....	751-56
401	Newtonville Rd.....	749-56
401	Ganaraska.....	757-56
401	Cobourg Cr.....	51-57
401	Ontario St.....	52-57
115	Cavanville Cr.....	37-57
401	Dye Works Cr.....	50-57
401	Hwy. 28 Interchange.....	44-57
133	C.N.R. South of Fowlers Cres.....	942-57
401	Mill St.....	61-57
Prop. Hwy.	Peterboro By-pass and C.P.R.....	943-57
401	Rd. between Lots 16 and 17 Clarke Twp.....	85-57
401	Cons. I and II Haldimand.....	89-57
401	Rd. Allice between Lots 28 and 29 Haldimand.....	90-57
401	Hwy. 115 Interchange.....	60-57
401	Rd. Allice between Lots 18 and 9 Hope Twp.....	86-57
401	Choates Rd.....	154-57
401	Rd. Allice between Lots 8 and 9 Hope Twp.....	82-57
401	Vernonville Sideroad.....	92-57
401	Gages Creek.....	49-57
401	Lots 32 and 33 Clarke Twp.....	83-57
401	Grafton Interchange.....	91-57
45	Ouse River.....	62-57
Prop. Hwy.	Peterboro and C.N.R.....	946-57
401	Lots 6 and 7 Haldimand.....	184-57
Prop. Hwy.	Otonabee River.....	945-57
401	Rd. Allice between Lots 9 and 10 Hamilton Twp.....	88-57
401	Colborne Interchange.....	94-57
401	Rd. Allice between Lots 22 and 23 Cramahe Twp.....	127-57
401	Biddy Lake Rd.....	208-57

PORT HOPE DISTRICT—(Cont'd)**Miscellaneous****BRIDGE SITE PLANS**

45	Trent Canal
401	Hope and Hamilton Twps.
401	Lots 6 and 7 Hamilton
401	Lots 28 and 29 Hamilton
401	Shelter Valley Cr.
401	Lots 17 and 18 Haldimand
401	Lots 28 and 29 Cramahe

RAILWAY BOARD PLANS

33	C.N.R. Hallowell
41	C.N.R. Hallowell
401	C.N.R. Choates Rd.
T.C.H. 7	C.N.R. at Peterboro

DISTRICT No. 8—KINGSTON**Field Work in Progress**

Hwy.	Location	Mileage
7	Marmora to Kaladar and.....	12.0
	Madoc Revision.....	2.6
42	Crosby to Westport.....	9.7
Dev. Rd.	Outlet to Lyndhurst.....	6.0

Field Work Complete

7	Marmora to Kaladar.....	15.1
15	Perth to Smiths Falls.....	12.9
33	Revision at Glen Miller.....	1.3
38	Hartington to Sharbot Lake.....	23.7

Drafting Complete

37	Roslin to Actinolite.....	10.7
42	Forthton to Athens.....	9.0

Miscellaneous Plans**BRIDGE SITE PLANS**

401	Joyceville Side Road
401	C.N.R. at Napanee
401	Napanee River
401	Collins Creek

RAILWAY BOARD PLANS

401	C.N.R. at Napanee
7	C.P.R. (W.P. 584-56)

Intersection Plans

2	Steeles Rd.
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Design Complete

7	Kaladar to Sharbot Lake.....	17.0
15	Joyceville to Seelys Bay.....	5.7
38	Glenvale to Hartington.....	9.9
401	Gananoque to Brockville.....	27.1
502	Napanee C.N.R. crossing to Hwy. 2 (W.P. 159-57).....	1.0
14	Foxboro to Marmora.....	8.2
15	Morton to Crosby.....	10.4
37	Corbyville to Roslin.....	9.3
45	Hastings to Norwood (W.P. 578-56).....	9.0
14	Belleville to Foxboro (W.P. 113-57).....	7.0
37	Belleville to Corbyville (W.P. 596-56).....	4.5
15	Seelys Bay to Morton.....	8.0

KINGSTON DISTRICT—(Cont'd)**Bridge Prints Processed**

Hwy.	Location	W.P.
2	Interchange west of Brockville.....	70-57
401		

DISTRICT No. 9—OTTAWA**Field Work in Progress**

Hwy.	Location	Mileage
17	Arnprior North.....	32.1
17	Ottawa to Arnprior.....	32.5
34	Hwy. 2 Northerly.....	12.0

Field Work Completed

29	Smiths Falls to Arnprior.....	32.5
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Drafting Completed**Miscellaneous Plans****BRIDGE SITE PLANS**

Cty. Rd. C.P.R. Kemptville to Hallville

RAILWAY BOARD PLANS

Cty. Rd. C.P.R. Kemptville to Hallville

Design Completed

15	Innisville Revision.....	1.0
401	Cornwall Twp.....	3.1
Dev. Rd.	Kemptville to Hallville Revision.....	1.2
15	Carleton Place By-pass (W.P. 936-57).....	2.7
401	Cornwall to Lancaster (W.P. 134-57, 138-57).....	14.5
401	Hwy. 16 to Iroquois (W.P. 169-57, 170-57).....	10.5
29	Pakenham to Arnprior (W.P. 601-56).....	8.3

Bridge Prints Processed

Hwy.	Location	W.P.
15	Mississippi River at Carleton Place.....	933-57
15	C.P.R. at Carleton Place.....	934-57
401	C.P.R. East of Cornwall.....	68-57
401	C.N.R. East of Cornwall.....	69-57
401	Raisin River.....	72-57

DISTRICT No. 10—BANCROFT**Field Work Complete**

Hwy.	Location	Mileage
28	Apsley to Bancroft.....	13.7
60	Barrys Bay.....	3.6
62	Steenburg to Bancroft.....	8.8
62	Round Lake to Pembroke.....	11.2

BANCROFT DISTRICT—(Cont'd)**Drafting Complete**

62	Round Lake to Pembroke.....	14.3
60	Algonquin Pk. to Barrys Bay.....	43.4

Design Complete

41	Kaladar to Northbrook (W.P. 120-57)	4.4
62	Madoc to Steenburg.....	24.6
62	Combermere Revision (W.P. 27-57).....	1.1
62	Steenburg North.....	10.8
500	Bancroft East.....	3.6
504	Apsley to Glenalda.....	4.3
62	Revision at Alice (W.P. 202-57).....	1.0

Bridge Prints Processed

Hwy.	Location	W.P.
62	Madawaska River at Combermere.....	77-57

DISTRICT No. 11—HUNTSVILLE**Field Work in Progress**

Hwy.	Location	Mileage
11	Barrie to Orillia.....	5.6
11	Burks Falls By-pass.....	2.0

Field Work Completed

11	Barrie to Orillia.....	6.7
11	Katrine to Burks Falls.....	8.5
Prop.	Craighurst to Gravenhurst.....	44.7
Dev. Rd.	Dyno Mine Rd., Hwy. 28 to Monk Lake (W.P. 201-57).....	6.5

Drafting Completed

60	Dwight to Algonquin Pk.	26.4
118	Bracebridge to Dorset	30.0
35	Halls Lake to Dwight	19.8

Miscellaneous Plans

69	Torrance to Glen Orchard
69 and 103	Intersection at Footes Bay

BRIDGE SITE PLANS

Prop. CAH	C.P.R. at Line "K" Craighurst to Coldwater
Prop. CAH	C.N.R. at Line "K" Craighurst to Coldwater
Prop. CAH	C.P.R. at Line "A" Coldwater to Gravenhurst
Prop. CAH	C.P.R. at Line "E" Coldwater to Gravenhurst
Prop. CAH	Creek at Line "A" (2) Coldwater to Gravenhurst
Prop. CAH	C.N.R. at Line "A" Coldwater to Gravenhurst
Prop. CAH	Severn River at Line "A" Coldwater to Gravenhurst
Prop. CAH	C.N.R. at Line "C" Coldwater to Gravenhurst
11	Orillia By-pass (W.P. 97-57) Coldwater to Gravenhurst

RAILWAY BOARD PLANS

CAH	C.P.R. at Line "H" Crown to Craighurst
CAH	C.N.R. at Line "K" Craighurst to Coldwater
CAH	C.P.R. at Line "K" Craighurst to Coldwater
CAH	C.P.R. at Line "A" Coldwater to Gravenhurst
CAH	C.P.R. at Line "E" Coldwater to Gravenhurst
CAH	C.N.R. at Line "A" (2) Coldwater to Gravenhurst

HUNTSVILLE DISTRICT—(Cont'd)

Design Work Completed

12	Coldwater By-pass (W.P. 970-57).....	1.5
69	Revision in Medora Twp., Bala to Footes Bay.....	1.2
121	Minden to Haliburton (W.P. 200-57).....	14.0
532	Revision in Humphrey Twp. Hwy. 69 to Rosseau (W.P. 123-57).....	0.9
Prop.	Craighurst to Coldwater (W.P. 571-56, 571C-56).....	15.0
35	Carnarvon to Hall's Lake.....	17.6
500	Irondale Revision.....	2.0
118	Bracebridge West (W.P. 618-56).....	5.0
124	Dunchurch to McKellar.....	13.7
532	Rosseau West (W.P. 123-57).....	5.0

Bridge Prints Processed

Hwy.	Location	W.P.
Prop.	C.P.R. at Craighurst.....	572-56
69	Magnetawan River.....	907-57
400	Coldwater River.....	185-57
121	Alsaw Br.....	222-57
12	Coldwater River.....	970-57

DISTRICT No. 13—NORTH BAY

Field Work in Progress

Hwy.	Location	Mileage
11	Burks Falls to Sundridge.....	12.0

Field Work Complete

64	Alban to Lavigne.....	36.6
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Drafting Completed

17	Revision to Mattawa By-pass.....	1.2
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The zone striping which warns against passing on a curve — Highway 11 at Marten River — in no way detracts from the beauty of the scene, North Bay District.



Development Road, Englehart to Larder Lake. Grading done by Department of Highways, New Liskeard District.

NORTH BAY DISTRICT—(Cont'd)

Miscellaneous Plans

BRIDGE SITE PLANS

- | | |
|----|-------------------------------------|
| 17 | C.P.R. on Mattawa By-pass, Line "C" |
| 17 | C.P.R. on Mattawa By-pass, Line "D" |

RAILWAY BOARD PLANS

- | | |
|----|-----------------------------|
| 11 | C.N.R. on North Bay By-pass |
| 17 | C.P.R. on Mattawa By-pass |
| 17 | C.P.R. on Mattawa By-pass |
| 64 | C.P.R. at Rutter |

Design Completed

11	Marten River to Timagami.....	13.0
17	Pembroke to Pt. Alexander (W.P. 115-57).....	10.9
17	Hwy. 94 to Sec. Rd. 531 (W.P. 165-57).....	8.0
64	Verner to Lavigne (W.P. 124-57).....	12.9

Bridge Prints Processed

Cont. No. 194-57

- | | |
|----|---------------------------|
| 17 | Sharpes Cr. at Rutherglen |
|----|---------------------------|

DISTRICT No. 14—NEW LISKEARD

Drafting Complete

Miscellaneous Plans

BRIDGE SITE PLANS

Hwy.	Location
66	O.N.R. Kirkland Lake

RAILWAY BOARD PLANS

- | | |
|----|--------------------------|
| 11 | T. & N.O.R. at Latchford |
| 66 | O.N.R. Kirkland Lake |

Design Work Complete

Hwy.	Location	Mileage
66	Kirkland Lake to Larder Lake, incl. revisions (W.P. 631-56, 132-57).....	19.2



A new bridge under construction over the Mattagami River at Smooth Rock Falls on Highway 11, September, 1957, Cochrane District.

NEW LISKEARD DISTRICT—(Cont'd)

Bridge Prints Processed

Hwy.	Location	W.P.
11	Montreal R., Latchford.....	189-57

DISTRICT No. 16—COCHRANE

Field Work Complete

Hwy.	Location	Mileage
11	Mattice to Hearst.....	14.6

Drafting Complete

BRIDGE SITE PLANS

11	Kapuskasing River (2 plans)
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RAILWAY BRIDGE PLANS

11	C.N.R. at Driftwood
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Design Work Complete

11	Opasatika to Mattice (W.P. 698-56, 699-56).....	20.0
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DISTRICT No. 17—SUDBURY**Field Work Completed**

Hwy.	Location	Mileage
17	Whitefish to Nairn, old and new 17.....	37.9

Drafting Completed**BRIDGE SITE PLANS**

Dev. Rd. Windy Lake (Levac)

RAILWAY BOARD PLANS

68 C.P.R. South of Espanola (W.P. 64-57)

Design Completed

541	Garson to Baileys (W.P. 644-56).....	3.2
69	Pt. au Baril to Magnetawan (W.P. 906-57).....	12.2
Dev. Rd.	Burwash West (W.P. 182-57).....	4.2
17	Graham Twp., Whitefish to Nairn.....	6.4
543	Long Lake to Hwy. 69.....	6.6
68	5 miles south of Espanola South (W.P. 130-57).....	4.5
68	10 Mile Pt. to Manitowaning.....	11.6

Bridge Prints Processed

Cont. No.	Hwy.	Location
104-57	69	Naiscoot
64-57	68	C.P.R. South of Espanola
199-57	544	Vermilion River
198-57	544	Onaping River

DISTRICT No. 18—SAULT STE. MARIE**Field Work in Progress**

Hwy.	Location	Mileage
17	Spanish to Blind River.....	38.0

Drafting Complete

17	Sault to Mont. R. (including revisions).....	74.4
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Miscellaneous Plans**BRIDGE SITES**

17	Root R. (2)
17	Algoma C.R. at Line "A"
17	Root R. at Line "A" (3)
17	Algoma C.R. at Line "B"
17	Jones C.R. at Line "E"
17	Sawmill C.R. at Line "A"
17	Root R. at Line "B"
17	Creek at Jones Landing Line "A"

Railway Board Plans

17	Algoma C.R. at Line "A"
17	Algoma C.R. at Line "B"

Design Complete

17	Heyden to Havilland Bay (W.P. 910-57 and 949-57).....	15.0
Mining Rds.	Elliot Lake (W.P. 172-57).....	22.2
129	W. End Cont. 56-230 West to Big Pine Lake (W.P. 171-57).....	12.5

Bridge Prints Processed

Hwy.	Location	W.P.
17	Goulais R.....	908-57
17	Stokely Brook.....	950-57

DISTRICT No. 19—FORT WILLIAM**Field Work in Progress**

Hwy.	Location	Mileage
17	Sistenonens Corns. to Shebandowan.....	12.7

Drafting Work Completed

BRIDGE SITE PLANS

595	Whitefish River (Hymer)
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RAILWAY BOARD PLANS

120	C.N.R. (Twp. of Conacher)
17	C.P.R. (Rossport)
17	C.P.R. (Ouimet)

Design Work Completed

17	Jackfish Lake to Schreiber (W.P. 920-57).....	23.8
17	W. Selim Division to Pays Plat. R. (W.P. 913-57) }	15.5
	Pays Plat. R. to Cavers (W.P. 914-57) }	
17	Amethyst St. W. Rd. to Loon L. Rd. (W.P. 917-57).....	7.8
590	Hwy. 17 North.....	1.5
61	Pigeon River.....	2.0
17	10.0 miles S. Red Rock Turn to Ouimet (W.P. 918-57).....	11.0
17	7.5 miles N. Hwy. 120 to Raith (W.P. 919-57).....	10.0

Bridge Prints Processed

Hwy.	Location	W.P.
17	Wolfe R.....	915-57
17	Coldwater R.....	916-57
11	Blackwater R.....	176-57
17	C.P.R. Rossport.....	911-57



Hot mix paving — Highway 17 (T.C.) three miles north of Highway 120, Fort William District.

DISTRICT No. 20—KENORA

Design Completed

Hwy.	Location	Mileage
17	Kenora West.....	2.0
71	Barwick to Rainy River.....	24.6
105	Wabigoon.....	1.5
105	Chukuni.....	3.4
17	W. Raleigh to Butler (W.P. 921-57).....	9.8
17	5 miles W. Hwy. 105 West (W.P. 922-57).....	11.0

Bridge Prints Processed

17	Winnipeg River at Kenora (W.P. 923-57)
105	Wabigoon River (W.P. 187-57)
105	Chukuni River (W.P. 503-56)

Drafting Completed

Miscellaneous Plans

BRIDGE SITES

Dev. Road	Sturgeon River at Superior Junction
R.B.P.	
Dev. Road	C.N.R. at Superior Junction

DISTRICT No. SP-56-1—WHITE RIVER

Bridge Prints Processed

Hwy.	Location	W.P.
17	White (Bremner) River.....	928-57
17	Betrand Cr.....	926-57
17	Michipicoten.....	927-57
17	Wabikoba Cr.....	925-57
17	Barrett River.....	952-57
17	Sand River.....	957-57
17	Coldwater River.....	953-57
17	Windy Lake and Creek.....	931-57
17	Agawa River (2).....	956-57

Photogrammetry Subsection

The following is a summary of the work completed by this subsection during the 1957-58 fiscal year.

Miles of projected location on photographs.....	1350
Square miles of plans drawn to a scale of 1" — 400'.....	512
Square miles of 5 plans drawn to a scale of 1" — 1320'.....	1452

In addition, a detail plan to a scale of 1" — 100' was compiled, from aerial photographs of Highway 401 from Yonge St., easterly to Victoria Park Ave.

Our dark-room printed 13,180 aerial photographs to add to our library of approximately 75,000 prints.

A breakdown of the above summary by Districts follows:

DISTRICT No. 1—CHATHAM

Plans	Scale	Area (acres)
Hwy. 3.....Puce to Tecumseh.....	1"=400'	11,222
Locations		Length (miles)
Hwy. 3.....Tecumseh By-pass		8
Hwy. 21.....Hwy. 82 to Grand Bend.....		5
Hwy. 81.....Parkhill North.....		3
Dev. Rd.....Alvinston to Courtwright.....		31

DISTRICT No. 2—LONDON

Hwy. 3.....West Entrance of St. Thomas.....	5
Prop. Ent.....Highbury Road Extension.....	3
Co. Rd.....Courtland to Port Rowan.....	20
Prop. C.A.H.....Brantford to Woodstock.....	22



Looking east towards Highway 73 — Highway 401 in London District.

DISTRICT No. 3—STRATFORD

Plans	Scale	Area (sq. mi.)
Galt to Kitchener.....	1" equals 1000'	105
Locations		Length (miles)
Hwy. 401..... Preston P.U.C.....		2
Prop. C.A.H..... Preston to Freeport.....		3

DISTRICT No. 4—HAMILTON

Plans	Scale	Area (acres)
Dundas By-pass.....	1" equals 400'	16,470
Hagersville to Jarvis.....	1" equals 400'	17,587
Caledonia to Hagersville.....	1" equals 400'	19,570
Ancaster to Brantford.....	1" equals 400'	39,537
Q.E.W. Easterly to Queenston.....	1" equals 400'	10,027
Locations		(miles)
Hwy. 3..... Humberstone Township Line.....		1
Hwy. 3..... Wainfleet By-pass.....		1
Hwy. 8..... Rockwood to Acton.....		2
Hwy. 20..... Allanburg Diversion.....		2
Hwy. 20..... Burlington Canal.....		1
Prop. C.A.H..... Toronto to Hamilton.....		15
Prop. C.A.H..... Q.E.W. to Queenston.....		6
Prop. C.A.H..... Dundas By-pass.....		7
Prop. C.A.H..... Ancaster to Brantford.....		15
Prop. C.A.H..... St. Catharines Area.....		10
Prop. C.A.H..... Fulton to Ancaster.....		15
Prop. C.A.H..... Wolfe Island to Hwy. 5.....		4

DISTRICT No. 5—OWEN SOUND

Hwy. 10.....	Orangeville By-pass.....	1.4
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DISTRICT No. 6—TORONTO

Plans	Scale	Area (acres)
Hwy. 7..... Hwy. 11 to Hwy. 50.....	1" equals 400'	25,785
Hwy. 7..... Thornhill to Green River.....	1" equals 400'	28,562
Hwy. 27..... Richview Side Rd. Nly. to Hwy. 7.....	1" equals 400'	13,554
Newmarket to Schomberg.....	1" equals 400'	17,191
Hwy. 401..... Twp. of North York, Yonge St. easterly to Victoria Park Ave.	1" equals 100'	4.5 miles in length
Locations		Length (miles)
Hwy. 7..... Easterly from Hwy. 27 to Green River.....		24
Hwy. 10..... Orangeville By-pass.....		1
Hwy. 12..... Manchester to Greenbank.....		5
Hwy. 50..... Bolton Area.....		2
Prop. C.A.H..... Toronto to Hamilton.....		15
Prop. Ext..... Newmarket to Schomberg.....		10
Service Rd..... Twp. N. Gwillimbury.....		4

DISTRICT No. 7—PORT HOPE

Plans		Scale	Area (acres)
Hwys. 2 and 401.....	Twps. Hope and Hamilton.....	1" equals 400'	23,537
	Peterborough Area.....	1" equals 400'	17,454
Locations			Length (miles)
Hwy. 12.....	Sunderland By-pass.....		1
Hwy. 12.....	Blackwater.....		1
Hwy. 12.....	Beaverton By-pass.....		12
Hwy. 12.....	Gamebridge Revision.....		4
Hwy. 14.....	Crofton to Bloomfield.....		5
Hwy. 36.....	Bobcaygeon to Burleigh Falls.....		23
Hwy. 41.....	Hallowell Twp.....		5
Hwy. 46.....	Kirkfield to Cobocok.....		7
Hwy. 121.....	Kinmount Area.....		2
Hwy. 503.....	Sebright to Norland.....		10
Co. Rd.....	Trenton Area.....		4

DISTRICT No. 8—KINGSTON

Plans		Scale	Area (acres)
Hwy. 401.....	Front of Leeds and Lansdowne Twp.....	1" equals 400'	17,190
Hwy. 401.....	Escott Twp.....	1" equals 400'	13,488
Hwy. 401.....	Yonge and Elizabethtown Twps.....	1" equals 400'	16,132
Hwy. 2.....	Front of Leeds, Lansdowne and Escott Twps.....	1" equals 400'	16,510
Locations			Length (miles)
Co. Rd.....	Outlet to Lyndhurst.....		6
Hwy. 7.....	Madoc By-pass.....		3
Hwy. 15.....	Joyceville to Seelys Bay.....		6
Hwy. 33.....	Revision at Glen Miller.....		2
Hwy. 37.....	Corbyville to Roslin.....		10
Hwy. 41.....	Kaladar to Northbrook.....		6

DISTRICT No. 9—OTTAWA

Plans		Scale	Area (acres)
Hwy. 17.....	Twps. of Fitzroy and McNab.....	1" equals 400'	23,802
Locations			Length (miles)
Hwy. 15.....	Connection to Hwy. 17.....		2
Hwy. 17.....	Cobden to Pembroke.....		20
Hwy. 29.....	Smith's Falls to Arnprior.....		33
Hwy. 31.....	Ottawa S.E.....		4

DISTRICT No. 10—BANCROFT

Plans	Scale	Area (sq. mi.)
Sec. Rds. 504 and 620.....Hwy. 28 easterly to Hwy. 62.....	1" equals 1320'	249
Location		Length (miles)
Hwy. 7.....	Madoc By-pass.....	3
Hwy. 41.....	Mazinaw Lake Area.....	5
Hwy. 41.....	Kaladar to Northbrook.....	5
Hwy. 500.....	Bancroft Easterly.....	4
Hwy. 503.....	Atherly to Sebright to Kinmount.....	40
Hwy. 504.....	Apsley to Glenalda.....	4
Mine Rds.....	Dyno Mine Nly.....	4

DISTRICT No. 11—HUNTSVILLE

Hwy. 11.....	Burk's Falls By-pass.....	2
Hwy. 12.....	Cold water By-pass.....	2
Hwy. 35.....	Minden to Dwight.....	46
Hwy. 69.....	Glen Orchard.....	1
Hwy. 69.....	Parry Sound By-pass.....	5
Hwy. 118.....	Bracebridge to Dorset.....	29
Hwy. 121.....	Minden to Haliburton.....	15
Hwy. 124.....	Ahmic By-pass.....	2
Hwy. 500.....	Irondale Revision.....	2
Hwy. 503.....	Kinmount Area.....	2
Hwy. 527.....	Baysville to Huntsville.....	20
Hwy. 532.....	Twp. Humphrey.....	5
Hwy. 532.....	From Hwy. 11 to Hwy. 516.....	15
Prop.....	Coldwater to Gravenhurst.....	45
Mine.....	Crowe River to Monk Lake.....	3
Mine.....	Dyno Mine Nly.....	4

DISTRICT No. 13—NORTH BAY

Plans	Scale	Area (sq. mi.)
Rutter to Lavigne.....	1" equals 1320'	285
Locations		Length (miles)
Hwy. 11.....	Burk's Falls to Sundridge.....	12
Hwy. 17.....	Pembroke to Mattawa.....	91
Hwy. 17.....	Mattawa to North Bay.....	39
Hwy. 64.....	Rutter to Lavigne.....	32
Hwy. 64.....	Verner.....	1
Hwy. 522.....	Commanda Revision.....	3
Hwy. 535.....	Hagar to St. Charles.....	7

DISTRICT No. 14—NEW LISKEARD

Plans	Scale	Area (sq. mi.)
Chapleau to Foyleyet.....	1" equals 1320'	585
Locations		Length (miles)
Hwy. 11.....	Cobalt Connection.....	5
Hwy. 11.....	Cobalt to New Liskeard.....	11
Hwy. 65.....	Twp. Farr.....	1
Hwy. 66.....	Twp. McVittie.....	1
Hwy. 66.....	King Kirkland.....	2
Hwy. 560.....	Gowganda.....	3
Hwy. 572.....	Haltre Nly. to Hwy. 101.....	2
Dev.....	Chapleau to Foleyet.....	62

DISTRICT No. 16—COCHRANE

Hwy. 583.....	Mead to Hearst.....	30
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DISTRICT No. 17—SUDBURY

Hwy. 17.....	Whitefish to Nairn.....	15
Hwy. 68.....	Whitefish Falls (Cemetery).....	2
Hwy. 541.....	Garson to Baileys.....	3
Hwy. 544.....	Levack to Cartier.....	21
Hwy. 545.....	Milnet Southerly.....	5
Dev.....	Burwash to Killarney.....	7

DISTRICT No. 18—SAULT STE. MARIE

Hwy. 17.....	Sault Ste. Marie to Agawa.....	94
Hwy. 17.....	Spanish to Webbwood.....	22
Hwy. 548.....	St. Joseph's Island Ferry.....	3
Mine.....	Elliot Lake Mining Roads.....	30

DISTRICT No. 19—FORT WILLIAM

Plans	Scale	Area (sq. mi.)
Sec. Rd. 587.....	Sibley Prov. Park..... 1" equals 1320'	228
Locations		Length (miles)
Hwy. 17.....	Cavers.....	5
Hwy. 17.....	Kakabeka Falls.....	5
Hwy. 61.....	Pigeon River.....	2
Hwy. 587.....	Sibley Prov. Park.....	25
Dev.....	Atikokan to Fort Frances.....	14

DISTRICT No. 20—KENORA

Hwy. 17.....	Twp. Docker.....	10
Dev.....	Atikokan to Fort Frances.....	73
Dev.....	Kenora to Minaki.....	35

Intersection Design Subsection

During the year ending on March 31, 1958, the following work projects were completed by the Intersection Design Group.

On the 1957-1958 work program, 58 work projects were completed. The major intersections included are as follows:

DISTRICT No. 1—CHATHAM

W.P. 142-56. Channelization — Relocated Hwy. 2 at the Thames River. (Chatham)

DISTRICT No. 2—LONDON

W.P. 510-56. Channelization — Intersection Hwys. 2 and 4. (Lambeth)

W.P. 704-56. Channelization — Intersection Hwys. 2 and 24A. (Paris)

W.P. 707-56. Separate turning lane — Intersection of County Road, Cons. II and III, and Hwy. 401, Westminster Township.

DISTRICT No. 3—STRATFORD

W.P. 523-56. Channelization — Intersection Hwys. 9 and 6. (Arthur)

DISTRICT No. 4—HAMILTON

W.P. 132-56. Pavement widening — Hwys. 5 and 25. (Palermo)

DISTRICT No. 5—OWEN SOUND

W.P. 54-55. Channelization — Intersection Hwys. 24 and 51. (Erin)

DISTRICT No. 6—TORONTO

W.P. 555-56. Channelizations — Hwy. 11 at Holland Landing.

W.P. 556-56. Channelization — Intersection Hwy. 5 and Dixie Road.

W.P. 559-56. Interchange — Intersection Hwys 401 and 10.

W.P. 559-56. Interchange — Intersection Hwy 401 and the Streetsville Side Road.

W.P. 560-56. Interchange — Intersection Hwy. 401 and the Oakville Side Road.

W.P. 560-56. Interchange — Intersection Hwys. 401 and 25.

W.P. 566-56. Channelization — Intersection Hwys. 48 and 47. (Ringwood)

W.P. 571B-56. Channelization — Intersection Hwy. 93 and New C.A.H. 400 extention.

W.P. 571C-56. Channelization — Intersection Hwy. 12 T.C.H. and New C.A.H. 400 extention.
(Craighurst)
(Coldwater)

W.P. 712-56. Channelization — Intersection Hwys. 7 and 12. (Brooklyn)

W.P. 713-56. Interchange — Intersection Q.E.W. and Kerr Street.

DISTRICT No. 7—PORT HOPE

W.P. 748A-56. Interchange — Intersection Hwy. 401 and Mill Street. (Newcastle)

W.P. 749-56. Interchange — Intersection Hwy. 401 and Newtonville Side Road, Clarke Township.

W.P. 745-56. Interchange — Intersection Hwy. 401 and Wooler Side Road, Murray Township.

DISTRICT No. 8—KINGSTON

W.P. 589-56. Interchange — Intersection Hwys. 401 and 29. (Brockville)

DISTRICT No. 9—OTTAWA

W.P. 600-56. Channelization — Intersection Hwys. 15 and 7. (Perth)

W.P. 602-56. Channelization — Intersection Hwys. 43 and 31. (Chesterville)

DISTRICT No. 13—NORTH BAY

W.P. 619-56. Channelization — North and South ends Callander By-pass and at intersection of the By-pass and Hwy. 94.

W.P. 622-56. Channelization — Intersection of Hwy. 17 and North Bay By-pass. (South End)

W.P. 622-56. Channelization — Intersection Hwys. 17 and 94. (North Bay)

DISTRICT No. 18—SAULT STE. MARIE

W.P. 759-56. Channelization — Intersection Hwy. 17 and Secondary Road 612.
(Quirke Lake Road)

On the 1958-1959 Work Program, 36 work projects were completed. The major intersections are listed below:

DISTRICT No. 1—CHATHAM

W.P. 188-57. Channelization — Intersection Hwy. 98 and Queen Street. (Tilbury)

DISTRICT No. 2—LONDON

W.P. 514A-56. Channelization — Intersection Hwy. 22 and 4. (Calamity Corners)

W.P. 514C-56. County Road Realignment to intersect Hwy. 22. (Lobo)

W.P. 190-57. Channelization — Intersection Hwy. 81 and 7. (Parkhill)

DISTRICT No. 4—HAMILTON

W.P. 29-57. Interchange — Intersection Hwy. 401 and Campbellville Side Road.

W.P. 30-57. Interchange — Intersection Hwys. 401 and 6. (Guelph)

DISTRICT No. 6—TORONTO

W.P. 746-56. Interchange — Intersection Hwy. 400 and Anne Street. (Barrie)

W.P. 105-57. Interchange — Intersection Q.E.W. and the Road Allowance west side of Bronte Creek.

W.P. 205-57. Channelization — Old Malton Road and Hwy. 7. (Woodhill)

W.P. 205-57. Entrance design for D.H.O. Yard on Hwy. 400.

W.P. 205-57. Revision — Interchange Hwy. 400 and Wilson Avenue.

W.P. 205-57. Revision — Interchange Hwy. 401 and Weston Road.

W.P. 213-57. Interchange — Intersection of New C.A.H. 400 and existing 400. (Crown Hill)

DISTRICT No. 7—PORT HOPE

- W.P. 579-56. Channelization — Intersection Hwys. 33 and 14. (Bloomfield)
W.P. 750-56. Interchange — Intersection Hwys. 401 and 2. (Port Hope)
W.P. 44-57. Interchange — Intersection Hwys. 401 and 28. (Port Hope)
W.P. 206-57. Channelization — Intersection of Hwys. 115 and 35. (Newcastle)
W.P. 60-57. Interchange — Intersection Hwys. 401 and 115. (Newcastle)
W.P. 91-57. Interchange — Intersection Hwy. 401 and Grafton Side Road.
W.P. 94-57. Interchange — Intersection Hwy. 401 and Colborne Side Road.
W.P. 111-57. Structure and Service Road treatment at the Hope-Hamilton Township Line on Hwy. 401.
W.P. 111-57. Interchange — Intersection Twp. Road, Lots 20 and 21, Hamilton Twp. and Hwy. 401. (Cobourg)

DISTRICT No. 8—KINGSTON

- W.P. 596A-56. Interchange — Intersection Hwys. 401 and 37. (Cannifton)
W.P. 192-57. Channelization — Niagara Park Road and Hwy. 2. (Barriefield Army Camp)
W.P. 192-57. Channelization — Hermes Ave. and Hwy. 2. (Barriefield Army Camp)

DISTRICT No. 9—OTTAWA

- W.P. 936-57. Channelizations — North and South end. Carleton Place By-pass, Hwy. 15.

DISTRICT No. 11—HUNTSVILLE

- W.P. 616C-56. Channelization — Intersection Hwys. 103 and 69. (Waubauskene)

On the 1959-1960 Work Program, 9 work projects were completed before the end of March 1958. The major intersections are listed below:

DISTRICT No. 2—LONDON

- W.P. 99-57. Intersection Hwy. 401 and White Oak Side Road. (Westminster Twp.)

DISTRICT No. 4—HAMILTON

- W.P. 28A-58. Interchange — Intersection Hwy. 401 and County Road, Puslinch Twp.

DISTRICT No. 6—TORONTO

- W.P. 96-58. Interchange — Intersection Hwy. 27 and Dixon Road.
W.P. 573A-56. Revision to Interchange — Intersection Hwys. 400 and 7.
W.P. 573A-56. Channelization — Intersection Hwy. 7 and Old Weston Road. (Woodbridge)
W.P. 574A-56. Channelization — Intersection Hwys. 7 and 27.

DISTRICT No. 7—PORT HOPE

- W.P. 2-57. Channelization — Intersection Hwys. 133 and 7. (Fowlers Corners)

Road Closing Plans

Planning was completed for the following in preparation for road closing hearings with the Ontario Municipal Board:

(a) *Highway 401*

Townships: Clarke, Hope, Hamilton, Haldimand, Cramahe, Toronto, Esquesing, Nassagaweya, Puslinch, Waterloo, N. Dumphries, Blenheim, Blandford.

(b) *Highway 400, Extension*

Townships: Vespra, Flos and Medonte.

Interchanges

Designs for the following interchanges were completed to establish property and control requirements:

(a) *Q.E.W.*

Ontario Street (St. Catharines)	Welland Avenue
Sheridan Road	Fruitland Side Road
Warner Road	Vineland Side Road

(b) *Highway 401*

Courtice Side Road	Montreal Street
Highway 45 (Port Hope)	Moulinette Road
Highway 29 (Brockville)	Simcoe Street (Oshawa)
Carmen Road (Iroquois)	Highway 16
Highbury Avenue	County Road's (Matilda Twp.)
Chrysler Park Road	Edward Street (Augusta Twp.)
Liverpool Road	Church Street
Napanee County Road	County Road, Lot 1, Con. II
Highways 2 and 34	(Pittsburgh Twp.)
Wellington Road, London	County Road (S. of Kitchener)
(redesign for future)	Highway 15 (Kingston)

(c) *Highway 400*

Highway 93 (Crown Hill)	Finch Avenue
Highway 27 (Barrie)	
also Brantford By-pass	Peterborough By-pass

Channelizations

Designs for the following intersections were prepared. These are to be constructed in the future when required.

Highway 48 at Steeles Avenue
Highway 112 at Highway 2
Highway 135 at Wellington Road
Highway 11 at Highway 63 (North Bay)
Highway 2 at Highway 106 (Welcome)
Highway 2 at Highway 15 (Johnstown)
Highway 48 at Markham Road
Highway 7 at Highway 133 (Fowler's Corners)
Highway 11 at Highway 17 (Pembroke)
Highway 11 at Bell's Corners
Highway 7 at Highway 10 (Brampton)
Highway 11 at Secondary Road 516
Highway 20-3A-58 (Turner's Corners)
Highway 2 at Fiddler's Green Road
Highway 2 at Walnut St. (Paris)
Highway 11 at Smooth Rock Falls
Highway 2 at Highway 28 (Port Hope)
Highway 4 at Highway 7 (Elginfield)
Highway 7 at Highway 62 (Madoc)
Highway 2 at Highway 100 (Thamesford)
Highway 115 at Highway 35
Highway 2 at 6th Road (Trenton)
Highway 17 at Loach Road (Sudbury)
Highway 20 at Barton Street
Highway 20 at King Street
Highway 20 at Highway 8
Highway 2 at Highway 15 (Barriefield)

Applications

(a) *Subdivisions*

Fifteen (15) subdivision plans at intersections were checked and recommendations made where necessary.

(b) *Shopping Centres*

Three (3) proposed shopping centres were checked and access arrangements designed.

(c) *Service Stations*

Twenty-one (21) proposed service station plans were checked and access designs prepared in accordance with D.H.O. approved Service Station Entrance Standards.

(d) *Building*

Fifty (50) building applications were checked by Intersection Design (these include residences, restaurants, motels).

Miscellaneous

In addition to the above work, the following was also completed:

- (a) Twenty-three (23) property sale recommendations were checked against future requirements.
- (b) Five (5) weigh scale sites were designed.
- (c) A design for the proposed Ogdensburg Toll Bridge and Plaza was prepared showing the interchange between the plaza and Highway 16.
- (d) Eighty (80) property requests were checked.

Right-of-Way Subsection

The following is a resume of the work carried out by this subsection for the fiscal year 1957-58:

Property requisitions processed.....	742
Property requisition revisions.....	150
Property sales processed.....	383
Number of Plans of Subdivisions processed.....	960
Official plans and proposed amendments studied and recommendations prepared.....	156

STATISTICS AND ECONOMICS SECTION

During the third year of its existence, the Statistics and Economics Section was able to draw upon the experience of the previous two years in meeting its increased and more diversified responsibilities.

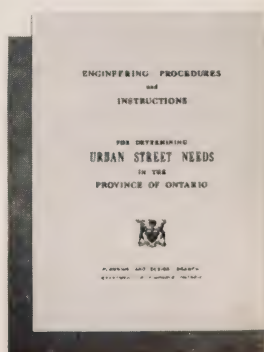
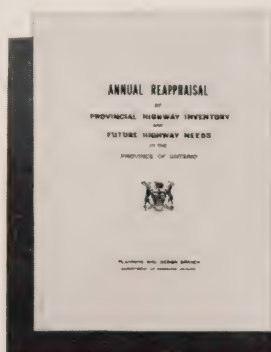
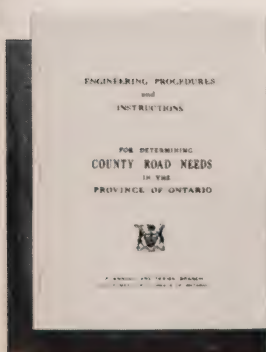
Municipal Roads Needs Study

Following upon the successful completion by the Section of the King's Highway Needs Study, the results of which were issued in March, 1957, as "A Plan for Ontario Highways," the Section was instructed to perform a similar investigation of the future needs of county and township roads and urban streets. Two temporary Subsections, the Rural Needs Study Group and the Urban Needs Study Group, were established to carry out this work, which was expected to be completed by the end of 1958. This work was started in conjunction with a continuing study of needs on King's Highways and Secondary Highways and the results will be published in the coming fiscal year in a report similar to "A Plan for Ontario Highways."

Rural Needs Study

In order to be able to appraise the adequacy of the rural roads the Department had to secure the cooperation of hundreds of officials throughout the Province. These would be expected to provide detailed and exact information about the condition of their local roads, and of needed improvements. So that this information should be stated in uniform terms, a manual was prepared, describing in exhaustive detail how roads were to be identified and classified, how traffic data were to be gathered, how numerical ratings for condition and geometric characteristics were to be assigned, and how future needs and estimated costs for improvements were to be evaluated.

Full cooperation was assured by numerous conferences with county engineers. As the results began to come in they were tabulated and statistically analyzed. Among the special studies undertaken were: the statistical correlation between county road mileage and such factors as county population, assessment and acreage; a similar investigation on the relation between suburban road mileage and the same factors; an appraisal of the township road network; and a study of the relation between maintenance expenditures and the various types of road surfaces.



Urban Needs Study

The urban centres under investigation were those with a population of 5,000 or more — 75 in all. Here, too, the work began with preparation of a manual, which outlined the purpose of the study and the procedures to be followed.

Each urban centre was requested to send maps and plans to the Department; by the use of these, together with data from other sources, the roads in each street system were classified according to a functional plan, e.g., as arterial routes, residential streets, etc. The proposed classifications were sent to each municipality for checking, and arrangements were made for the local authorities to obtain peak-hour traffic counts at selected locations, and structural inventories of the major roads, bridges and the various forms of traffic control.

Once the information gathered had been sent to the Department by a municipality, a conference was arranged to determine the deficiencies of the street system and discuss what remedial measures were required to make the system adequate. Work sheets, based on these remedial measures, were compiled and left with the local authorities so that they might estimate costs. By the end of the fiscal year complete information had been received from 31 of the 75 centres, 27 conferences had taken place, and costed work sheets had been received from 10 centres.

Updating of Provincial Highway Needs

A re-analysis of needs on King's Highways and Secondary Highways was carried out in order to bring this data up to date for publication with the results of the Municipal Roads Needs Study. The Inventory Group supervised the study of needs on Provincial highways which was performed by district personnel who forwarded their findings to the Inventory Group for checking, collating, and tabulating.

Routine Duties

The regular work of the Section was carried forward by two permanent subsections, the Inventory Group and the Transportation Planning Group.

Inventory Group

In order to plan adequate highways for Ontario, the Planning Division must have complete and up-to-date information about the geometric characteristics, condition, and traffic-carrying capacity of every mile of highway in the Province. To provide this information is the function of the Inventory Group.

During the early part of 1957 the Inventory Group underwent a complete reorganization. At this time the group was broken down into three major subgroups, dealing with:

- (a) Highways, (b) Structures, (c) Railways

Fundamental data were compiled and procedures developed for performing a continuing reappraisal of the highway inventory. These were brought together in a manual that would assure uniformity in the accumulation, tabulation and analysis of inventory data.

Various sets of maps were drafted: District Patrol Maps, showing the relation between Control Sections (that is, sections of highway that could be described as a unit), structures and railroad level crossings; maps showing the years when new or improved structures would be needed; maps showing all level crossings of railroads over King's Highways; and maps detailing the adequacy of structures and highways.

Finally, with the help of the Information Section, a photographic record of all structures and railroad level crossings in the Province was begun.

Transportation Planning Group

The responsibilities of this group included both the examination of the specific needs for highway improvements of individual regions and rural municipalities, and the study of the economic background of these needs, and the economic feasibility of meeting them.

Area Transportation Studies

Area Transportation Studies of several types were performed. The first, regional studies, examined the needs of broad, integrated regions. One such study, on the Toronto-Hamilton region, was completed, and another, on the region between Toronto and Lake Simcoe, was begun.

These studies involve full-scale analysis of the economic potential of the region and the past and projected traffic growth on every mile of highway within them. Wherever the need for future highway facilities becomes apparent, these, usually of the freeway class, are recommended, and their approximate locations are suggested.

Similar to these studies were the examination of the Secondary Highway pattern of the northern part of the Province, and the analysis of the local-road needs of the Hastings-Frontenac-Renfrew area, both of which were in progress at the end of the fiscal year.

Finally, there were a number of special studies, which involved the evaluation of requests made to the Department for the assumption or construction of individual roads. During the fiscal year 34 special studies were performed, on requests coming from all parts of the Province, from Kenora to Cornwall.

Economic Studies

Economic Studies performed were very diverse. They included an examination of the relation between rural population density and agricultural productivity, with a view to setting up criteria for highway service to rural areas; bringing up to date earlier predictions on future passenger car and commercial vehicle travel; developing procedures for performing cost-benefit analyses on highway facilities, and applying these procedures to two proposed bridges (which were to replace ferries); preparation of a report on the statistical requirements of a highway cost allocation study for Ontario, by means of which the costs of highway service might be fairly distributed among the various types of highway users; and the developing of a statistical sampling technique to help the Needs Study groups to discover the number of vehicle-miles of travel in 1958 on all of Ontario's township roads and residential streets.

TRAFFIC SECTION

W. Q. MACNEE, P.Eng., Traffic Engineer

The work of the Traffic Section was carried out by 5 groups, namely: Traffic Control, Characteristics, Route Analysis, Accident Records and Traffic Studies.

Traffic Control

During the fiscal year of 1957 numerous studies were conducted in response to requests for traffic signal and flashing beacon installation and signing improvement. A number of studies were also made to investigate the causes of accidents at a number of accident-prone locations. Speed zoning studies were carried out to establish more realistic speed limits for specific sections of the highway system. In addition to these studies a considerable number of requests were answered by letter or visits to the site were made by Traffic Control personnel.

Studies were made and reports prepared in 65 cases where requests for traffic signals or flashing beacons were received. Traffic signals were recommended at eleven of these locations and flashing beacons at seven. A complete inventory of all signal installations operated by the Department is now being made with a view to establishing proper timing based on the traffic requirements.

Miscellaneous studies made as a result of requests for traffic control or personal observation of deficiencies in signing, pavement marking, signalization, etc., totalled 81.

A total of 29 speed zoning studies were completed in this fiscal year. Since it was not possible to augment our staff because of space limitations, a considerable backlog of speed zoning studies is on hand at present. Additional personnel have recently been placed on this work and it is hoped that this backlog can be eliminated by the fall of 1958.

The Traffic Control Sub-section prepares sign and pavement marking layouts for all interchanges and major channelized intersections, both those previously existing and those constructed during the year. In addition, all designs prepared by the Intersection Design Section are checked by the Traffic Control Sub-section to determine whether they can be adequately signed.

A total of 150 sign and pavement marking layouts were prepared during the year. These may be subdivided as follows:

Layouts for new interchanges.....	18
Layouts for new channelizations.....	35
Layouts for existing interchanges and channelizations.....	52
Special layouts for reports on traffic studies made during the year.....	45

Characteristics

During the past year 18,000 24-hour traffic volume counts were obtained on King's Highways as compared with 13,000 in the previous year. These counts were supplemented by traffic volume counts on county roads and municipal streets.

A permanent system of continuous traffic counting is established at 15 locations. This was supplemented by some 200 control stations, some of which gave sixty 24-hour volume counts per year while others gave but 12 days per year.

A major step forward in maintaining a traffic volume inventory was taken when the Characteristics Group established some 1,500 King's Highway Sections over which the traffic volume remains virtually constant.

A new traffic volume book covering the three years 1955, 1956 and 1957 is in course of publication. This book identifies these sections of the King's Highway over which the traffic volume remains essentially the same from one end to the other. The length of each section is given as well as the average annual daily traffic volume for each of the three years mentioned.

Further research has been done with electronic equipment and the equations produced are being tested for their adaptability to the seasonal variations of traffic volumes.

Route Analysis

The primary function of the Traffic Route Analysis Group is to plan, process, analyse and prepare reports concerning origin-destination surveys. Other types of studies such as volume-capacity studies, benefit-cost analysis and special research studies are also undertaken by this group.

A number of small origin-destination surveys were made near the following centres: Brockville, Trenton, Picton, Cronke's Causeway, Norval, Waterdown, Peterborough, Britannia, Morriston, Elmira, Markham, Listowel, Cobalt, Haileybury and New Liskeard. Some origin-destination surveys were also taken for traffic analysis of Road Closing projects.

This group has also processed and analyzed a considerable amount of work for the Municipal Needs Study that is being conducted by the Statistics and Economics Section. Volume counts were taken, adjusted, projected and pictorially presented for 2,350 sections of county roads throughout the Province.

A research study was conducted on Highway 401 in the Toronto area during August, 1957. An attempt was made to investigate and correlate traffic volumes, vehicle classifications, speeds and capacities by lanes. Many other valuable characteristics of traffic movements were obtained from this study.

Besides the major projects requested directly by the Planning Engineer, various types of requests were received from other Sections within the Department. About 70 such requests were processed for the Intersection Design Section and approximately 20 for the Priorities Section.

Accident Records

The Accident Records Group, established within the Traffic Engineering Section in September, 1947, records the locations of all motor vehicle traffic accidents occurring on the King's Highway System. Records of accidents reported as occurring on secondary highways and county roads and in municipalities where connecting link agreements have been made with the Department are also filed for ready reference by Traffic Engineering personnel.

Although the Motor Vehicles Branch of the Department of Transport maintains a statistical record of all accidents reported throughout the province, these records do not include sufficient information with respect to the locations where the accidents occurred.

Copies of reports are received and by maintaining an up-to-date accident location filing system, we are in a position to have readily available a complete accident experience record for any specific location or section of highway within a matter of minutes.

Accident statistics are compiled for use by the Traffic Control and Research Groups, the Intersection Design and Priorities Sections, etc., and include accident experience records, tabulations of fatalities and injuries, tabulation of accident and fatality rates for the entire system of King's Highways.

Data regarding train-vehicle accidents, accidents at locations of traffic signals, locations where new signing have been installed are recorded on a Kardex filing system.

Traffic Studies

The Traffic Studies Group collected all the field data required by the other units of the Traffic Section. In addition some special counts were performed for some smaller municipalities who were without means for obtaining their own data.

PLAN FILES AND REPRODUCTION SECTION

W. L. JACKSON, Superintendent

The following is the annual report for the above Section covering the fiscal year of 1957-58.

Plan Files

Summary of new plans received during the year, indexed, numbered (except A and P plans), cross referenced and filed.

A.	Assumption and Reversion.....	124
B.	Highway Detail.....	87
C.	Highway Profile.....	130
D.M.	Interchanges.....	83
F.	Proposed Revisions.....	215
G.	Railway Crossings.....	35
M.	Miscellaneous.....	13
O.P.	Official Plans.....	117
P.	Land Plans.....	4,423

TOTAL..... 5,227

The issuing of "A" plans was discontinued during the year. These plans are now incorporated with the "P" plans under the new system established by the Land Surveys Branch.

Draughting

The plotting and referencing of the Assumption, Land Purchases, Sales and Subdivision plans is shown on the Summary below, this being an increase of 35% over the previous year.

	Balance on hand April 1/57	Received during the year	Completed during the year	Balance on hand March 31/58
P — (Land Plans).....	374	3,990	4,075	289
Deeds — (Purchases).....	31	1,272	1,222	81
Deeds — (Sales).....	12	433	403	42
Subdivisions.....	13	447	443	17
A — (Assumption, etc.).....	8	124	132	.....
TOTALS.....	438	6,266	6,275	429

Plan Service

The following summary shows the number of plans in use by the different Sections and charged out from the files as of March 31, 1958.

East Block		559 Jarvis St.	
Planning and		Location.....	442
Trans. Canada Offices.....	159	Intersection Design.....	121
			563
Downsview		1173 Bay St.	
Contract Checking.....	68	Right of Way.....	141
		Design.....	50
		Intersection Design.....	15
			206
TOTAL.....		996 Plans	

During the year some 61,340 plans were charged out for general use in the different Sections. In addition all requisitions for prints received from the Districts, Land Surveys, Property and Bridge Offices were fulfilled.

Plan Reproduction

During the year some 50,453 tracings were handled to make 298,944 prints of all types, a total of 1,671,165 lineal feet were run, which produced 4,025,612 square feet of prints. These figures, turned into miles and acres, show we ran 316.5 miles of prints, which prints would cover an area of 92.4 acres. This is an increase of 36% over the production of the previous year.

In July, the small Bruning Machine was replaced by a much faster Star Machine. This enabled us to keep up with the increasing demand for prints. Only 16,169 square feet of prints had to be sent to commercial companies during the year.

The following is the distribution summary, given in square feet, of the prints produced.

Planning and Design Branch

Location.....	1,348,937	
Road Design.....	632,609	
Bridge.....	294,053	
Traffic.....	34,226	
Planning Economics.....	3,209	
		2,313,034 sq. ft.

Other Highway Branches

Contract Control.....	1,603,572	
Map Office.....	102,460	
Municipal Roads.....	1,115	
Financial Compt.....	3,300	
Miscellaneous.....	802	
		1,711,249 sq. ft.

Other Departments

Fire Marshal.....	246	
Lands and Forests.....	285	
Public Works.....	518	
Public Health.....	131	
Miscellaneous.....	149	
		1,329 sq. ft.
		4,025,612 sq. ft.

CARTOGRAPHY

Early in the year maps at a scale of 4 miles to the inch, of the combinations: Brant, Elgin, Middlesex, Oxford and Norfolk; and York and Ontario were printed from bases revised in 1956.

During the year bases were revised and maps printed of the following single maps: Lambton, Simcoe, Muskoka and Renfrew, and of the following combinations: Northumberland and Durham, Peterborough and Victoria, Perth and Huron, and Essex and Kent.

Towards the end of the year the bases for Carleton, Lanark, Leeds and Grenville were revised in preparation for printing a new edition.

Work was done on revising the bases for the following single maps: Parry Sound, Hastings, Haliburton, and Dundas, Stormont and Glengarry so as to keep them up to date.

Some work was done on making new bases for the Southern portion of the District of Sudbury at a scale 4 miles to the inch.

While the bases were being prepared for the printing of the road map, a number of maps showing changes in pavements on highways were prepared and sent to map companies in Canada and the United States.

The progress charts for all the highways were brought up to date and new charts were made for the highways recently assumed. These charts, in conjunction with the revised mileage sheets, were used to compute the totals of the various types of pavements in the counties and districts.

Assistance was given to the Cartographic Section of the Department of Lands and Forests in the preparation of one of their maps of Northern Ontario.

At the request of the Ontario Motor League their road book was checked and a number of revisions pertaining to highway numbers and mileages were noted.

The following miscellaneous work was done in the Section: new highways were drawn on a map of the united counties of Dundas, Stormont and Glengarry for the Provincial Police; revision of Peterboro sheet to show new highways — diversions revisions of alignment — for the Geological Surveys Branch of Department of Mines and Technical Surveys, Ottawa; compilation of a mileage table of the Trans-Canada Highway for the American Automobile Association; compilation of a new mileage folder for the Kirkland Lake Activities Club; and checking maps for Departmental use from time to time.

The customary revisions were made on the road map bases in preparation for printing the 1958 road map. New pavements on highways, secondary highways and county roads were shown; some new place names were added; a new printer's copy of the indexes was made to show all new populations according to the Municipal Guide as well as the new places appearing on the road map. Thirteen new city bases were made and some others were enlarged to show connections to Highway 401.

In May, the draughting office of the Municipal Roads Branch under Mr. K. Gould became a part of the Cartographic Section. This office keeps up to date all county, district and township maps at scales of 1 mile to the inch, 2 miles to the inch, and 1 mile equals 2 inches. During the remainder of the year, work was completed on a new map of Leeds and Grenville County, and work began on new maps of Norfolk and Waterloo Counties.

Plans of the following townships were redrawn and brought up to date: Barrie, Cardiff, East York, Elzivir, Faraday, Hungerford, Huntingdon, King, Madoc, Marmora, Mayo, Muskoka, McClure, Orillia, Saugeen, South Elmsley, Tiny, Tudor, Tyendinaga, Waterloo, Wellesley, Wilmot, Wollaston, and Woolwich.

The following miscellaneous work was done from time to time throughout the year: all county and township plans were revised from assumption and reversion plans; all county by-laws were checked for accuracy, before going down to be approved by order-in-council, and were used to revise the county maps; all subdivision plans were submitted by the Department of Planning and Development to have noted on them whether or not they abut on a county or a county suburban road; county sheets showing surfaces on all county roads were kept up to date, one copy for the Cartographic Section and one for the Municipal Roads Office; these surface sheets are also used as guides to show new township roads on township plans, or to show township roads no longer in use; revised all plans of counties, townships, and municipalities to show the limits of the latter from information sent in by the Municipal Board; added to file of city and town plans by tracing plans sent in from municipalities.

ROAD DESIGN SECTION

H. D. McMILLAN, P. Eng., Road Design Engineer

(a) Projects Pre-Engineered Computed and Checked

Highway	Grading Projects	Paving Projects	Structures
Dual.....	78 Miles	53 Miles	31
T.C.H.....	138 "	40 "	37
Others.....	377 "	330 "	52
TOTAL.....	593 Miles	423 Miles	120

(b) The number of Highway Standards books in circulation increased from 400 to over 600 and 11 new standards and six revised standards were approved and issued to book holders. During the year more than 100 special standards were prepared for use in contracts and design criteria.

(c) Office accommodation has been acquired at London, North Bay, Kingston and Port Arthur and these offices are being staffed with engineers, estimators and draughtsmen. These Regional Offices prepare all contract data (drawings and estimates) and submit them to Headquarters in Toronto for examination and final approval.

(d) Start has been made on the preparation of a Manual of Pre-Engineering Methods and Procedures for issue to all Road Design staff. This manual affords guidance to engineers and estimators in the preparation of all their work, and marked improvement in the quality of work has been noted since the adoption of this manual. Reports and findings of the Engineering Audit Section are constantly analyzed and factors affecting pre-engineering estimates are abstracted and included in the manual in order to obtain more accurate estimates.

(e) Work has been prepared for a large number of contracts where drawings were issued in "book-bound form." This has tended to detail quantities more accurately and to improve standards of draughtsmanship. In addition, improved detailed information is sent to the construction engineers in each district defining the breakdown of all quantities of materials involved in the contracts in their districts.

(f) It can be noted that great progress has been made in applying the Electronic Computer to Road Design Office work: 375 miles in the present year as against 77 miles in the previous fiscal year have been processed through the Computer, and earth quantities obtained in this way.

(g) Projects Detailed by the Intersection Detail Design Group

	2 Legs	3 Legs	4 Legs	High Speed Interchange
Cloverleaf				
Dual.....	7	2	1	5
Channelization				
T.C.H.....	4			
Other Hwys.....	50			
TOTAL.....	54			



The one remaining covered bridge in Ontario spans the Grand River at West Montrose on Highway 86.

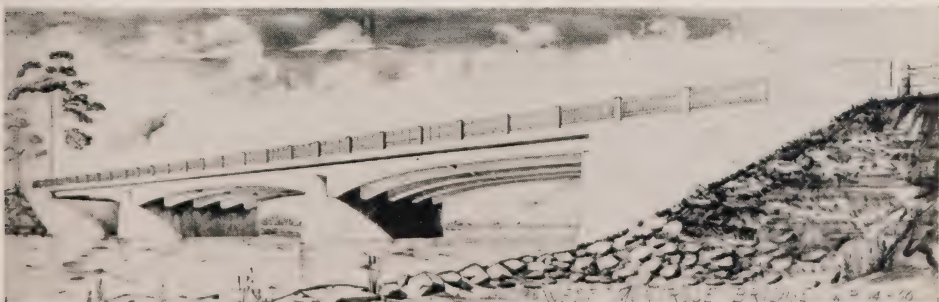
BRIDGE DESIGN SECTION

A. M. TOYE, Bridge Engineer

Bridge Planning

During the year a detailed inspection was made of 1,760 bridges on King's Highways and 442 bridges on secondary highways. The data obtained from these inspections were used in rating the structures from both a structural and a functional point of view. The ratings were then used in establishing priorities for replacement.

The past year was marked by an increase in the amount of preliminary study and pre-engineering given to proposed bridge sites, particularly in the case of river crossings. Many field trips were made to examine proposed bridge locations and to determine the feasibility of bridging the river on the suggested line. Hydrological studies were made to determine the proper bridge openings and soil investigations were carried out to determine foundation conditions. In one case helicopter service was employed to transport soil drilling crews and equipment to an otherwise inaccessible site. It was found that a substantial saving in cost as well as in time had been effected by this means.



Drawing above illustrates new structure to be constructed on a revision of Highway 86 at West Montrose. It will carry heavy traffic over the Grand River. The Old Covered Bridge will be maintained for local traffic.

Bridge Design

We still find it necessary to employ private consulting engineers for bridge design. Of the 99 structures completed during the year, 57 were designed by Consultants and 42 by our own staff. In the same period a total of 92 new designs were begun, 44 by Consultants and 48 by our staff. Plans were also prepared for over 500 concrete culverts, many of which had to be specially designed.

All Highway bridges designed by Consultants are examined and approved by our engineers. We have also the responsibility of approving bridges and culverts proposed for municipal roads; 528 such structures were processed during the year.

Of interest is the fact that the only covered bridge in Ontario will soon be replaced — but not discarded. The 77-year-old covered bridge at West Montrose has been overloaded by the traffic on Highway 86 for many years. A new 3-span bridge has been designed to cross the Grand River on a diversion of the highway. This will relieve the covered structure which will, however, be kept in repair and will be available for local traffic.

Bridge Construction

Some 11,140 feet of bridging, comprising 99 structures, was completed during the year. Included in these were 17 Railway Overheads—10 over the C.N.R., 5 over the C.P.R., 1 over the T.H. & B., and one which crossed both the New York Central and the Pere Marquette Railways.

Twenty-four structures were completed on Highway 401 as follows: —

- 2 on the Windsor to Tilbury section, which is now in operation and will be officially opened in June, 1958.
- 2 on the London By-pass Section, allowing it to be opened in May, 1957.
- 12 on the new section West of the Toronto By-pass from Highway 27 to Highway 25.
- 1 on the Trenton to Belleville Section.
- 1 on the Belleville to Napanee Section.
- 2 on the Kingston By-pass, allowing it to be opened in November, 1957.
- 2 on the Gananoque to Brockville Section.
- 2 on the Brockville to Cornwall Section.

Nine structures were completed on the Eastern half of the new Freeman-Wolfe Island diversion between Highway 25 and Burlington.

Three grade separations were completed on the Q.E.W., one at Mississauga Road, one at Cawthra Road, and one at Highway 25.

Three structures were completed at the West end of the Lakeshore Expressway in Toronto.

On the Trans-Canada Highway the following seven structures were completed:—

C.P.R. Overhead on Highway 7 on the Lindsay By-pass,

C.N.R. Overhead on Highway 103 at Waubaushene,

Gibson River Bridge on Highway 103,

French River Bridge on Highway 69,

Birch Creek Bridge on Highway 17 at Webbwood,

C.N.R. Overhead Highway 17 at Sistonen's Corners—West of Fort William,

Beaver Creek Bridge on Highway 17, East of Kenora.

A complete list of all structures completed is given in Appendix No. 4.

Not included in this list are 503 concrete culverts in spans ranging from 4 to 20 feet and costing \$1,750,000.

Satisfactory progress was made on the construction of the Burlington Bay Skyway. The concrete sub-structure has now been completed, 75% of the structural steel has been erected and 25% of the concrete deck has been placed. It is expected that the bridge will be opened to traffic in the early fall of 1958.

Many of the components of both bridges and culverts are supplied to the contractor by the Department. One of the duties of the Bridge Office is to arrange for the supply of these articles. During the year 970 requisitions were prepared specifying the quantity and quality of the various items. Arrangements were also made to have them inspected by private companies specializing in this work. These requisitions covered a great variety of materials including 8,000 tons of reinforcing steel, 123,000 feet of piling, 14,400 feet of steel hand-railing and 5,000 gallons of paint.

Miscellaneous

During the year 2,000 copies of the 1957 booklet "Bridge Clearances on King's Highways of Ontario" were issued to trucking organizations and other interested parties. This is double the number issued in the previous year, an indication of the demand for this information. During the year the service was extended to cover Secondary Highways as well as King's Highways and is now being further extended to provide information on county and township roads.

SERVICES BRANCH

C. A. ROBBINS, *Director of Services*

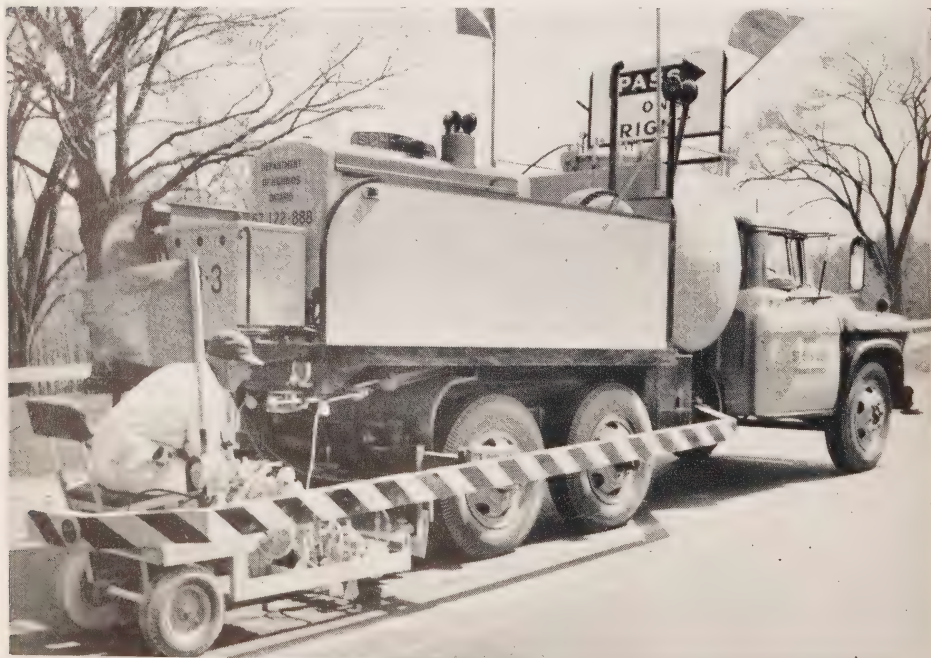
This Branch provides services for the rest of the Department and consists of the following sections:

- (1) Buildings
- (2) Equipment
- (3) Land Surveys
- (4) Office Services
- (5) Property
- (6) Sign and Building Permits
- (7) Supply
- (8) Tenders

Building Section

F. E. Cavell, Superintendent

The Building Section is established to review and consolidate the building requirements of the Department, allocate space, supervise buildings erected for the Department, prepare architectural plans, design buildings, attend to communication service and act as liaison with the Department of Public Works in all matters pertaining to buildings occupied or required by the Department of Highways.



New Design Zone Striper—Built and designed in the Department of Highways' Equipment Section Shop at Downsview. This unit entails the features of producing a zone line either on the right or left side while travelling with traffic. It is believed to be the only striper of this type in operation in U.S.A. or Canada.

During the 1957-58 fiscal year the Building Section:

1. completed arrangements for the construction of 39 new buildings, including:
 - (a) office buildings,
 - (b) district equipment repair garages,
 - (c) district patrol garages,
 - (d) salt storage buildings,
 - (e) weigh scale buildings;
2. designed and completed architectural plans for approved building requirements of the Department;
3. approved procurement of additional office space, arranged necessary leases;
4. allocated available office space, moved and installed necessary partitions and other facilities required for the proper conduct of the business of the Department and proper accommodation of personnel;
5. conducted surveys and studies of present accommodation and facilities and future needs of the Department;
6. arranged for installation and improvement of communication equipment as required;
7. carried out inspections of:
 - (a) property sites,
 - (b) existing buildings,
 - (c) new construction.

Head Office Accommodation: The Department is now occupying space in 13 separate buildings in Metropolitan Toronto. Plans are well advanced to locate the Department of Highways administrative services and personnel in one area at Downsview.

Regional and District Office Accommodation: The architectural design of the planned regional and district office buildings has been revised and improved.

The new district office design provides 14,000 square feet of usable office space.

The standard 9-bay office plan, similar to the Owen Sound office, has been revised to include a reception and switchboard area at the main entrance to the building.

Garage Accommodation: District equipment repair garages of standard design were completed during the year at Ottawa and Chatham. New garages at Bancroft, Kingston and Sudbury are in advanced stages of construction.

A total of 33 patrol garages were approved for construction during the year. Twenty-seven of these are now completed. The garages at Port Hope, Geraldton, Ear Falls, Marathon, Red Lake and Downsview are scheduled for completion in the near future.

The plans for patrol garages have been revised. The new design combines additional facilities with a more economical roof design.

In co-operation with the Ontario Fire Marshal's Office, the Department has approved standard fire extinguishing equipment for all D.H.O. garages.

Repairs and Alterations, Existing Accommodation: During the year 249 requests for building repairs or alterations were received and processed. Miscellaneous requests of a general nature, including requests for partitions, illumination, decorating, parking accommodation, ventilation, etc., totalled 299. These included various renovations for the Department of Transport.

Property Requisitions: Requests for procurement of property for 25 new patrol yards or extension of present patrol yards were approved. Ten requests were cancelled due to poor conditions or the high cost of developing the proposed sites.

Inventory of Department Buildings: A complete listing of the buildings and properties owned by the Department in each district is being compiled. This listing will provide a ready reference of all buildings and patrol yards, etc., showing the location and size of the property and the floor plans, etc., of the buildings.

The listing for Chatham, London, Stratford and Owen Sound districts has been completed. The listing for the other districts is under way.

ACCOMMODATION SURVEY AND STUDY

A comprehensive study and survey of office space, facilities and equipment used by the Department in Toronto and Downsview buildings has been completed. This information has been plotted on plans of the present buildings and proposed new buildings at Downsview. The study and survey will continue and complete floor plans of each section showing the location of desks, cabinets and other equipment will be prepared.

The study will continue and the peculiarities of the Department's space requirements in each section will be plotted. The final plan will show the Department's office space requirements for the Province.



Cutting and bending reinforcing steel at Central Stores, Downsview.

COMMUNICATION SERVICES

The total number of requisitions for additions and alterations in telephone service was as follows:

(a) for new telephone equipment.....	325
(b) to discontinue service.....	22
(c) for change of location.....	72
(d) for change of service.....	16
(e) for additional equipment.....	37
(f) for new switchboards (North Bay; Bancroft; 165 Bloor Street East; Room 1607 Queen's Park, Department of Transport).....	4
(g) for improved switchboards (Kenora; New Liskeard; Huntsville).....	3
TOTAL.....	479

Requests were received from 12 districts for mobile telephone service totalling 80 units. Installation and monthly inspection service was arranged.

Office intercommunication systems were approved and installed at Port Hope, Owen Sound, Kenora, Bancroft and Queen's Park. Paging systems have also been installed at various D.H.O. offices and garages.

The installation of a two-way mobile radio service is under study.

A field survey has been completed of the needs of the Department by various companies interested in supplying the necessary equipment.

The teletype system now in use is also under study. The system is inadequate due to the present load between district offices and head office. It is anticipated a modern automatic system will be installed as a result of this study.

REGIONAL BUILDING INSPECTORS

The service provided by the Building Section has been improved with regional inspectors representing the Superintendent of Buildings now located at London and North Bay to facilitate studies and inspections. During the past six months these inspectors have carried out 198 inspections of properties and buildings.

Equipment Section

T. W. Johnston, Superintendent

The Equipment Section, through its head office and field supervisors, is responsible for the preparation of specifications, inspection, testing, acceptance, and distribution of new machines, and, in conjunction with other sections, arranges and prepares the old equipment for disposal. The Section is also responsible for the supervision of the maintenance of all Department equipment, and the supervision of machine safety. The Section operates two H.Q. garages, and an instrument repair shop.

The Department operated the following major equipment during the year:

Trucks.....	1,428	Gradalls.....	8
Power Graders.....	300	Ferries.....	6
Wheeled Tractors.....	419	Core Drills.....	4
Track Tractors.....	84	Earth Augers.....	4
Compressors.....	179	Multiple Blade Maintainers.....	4
Distributors.....	179	Carryalls.....	1
Trailers.....	200	Asphalt Finishers.....	3
Special Sand Bodies.....	288	Bar Benders.....	1
Rollers.....	63	Hydraulic Cranes.....	4
Weed Sprayers.....	29	Hyd. Swing-type Shovels.....	1
Scales.....	50	Hydro Seeders.....	13
Cement Mixers.....	28	Moto-Pavers.....	1
Cold Patch Mixers.....	18	Mud Jacks.....	1
Pulvi-Mixers.....	18	Yard Cranes.....	5
Asphalt Mixers (Hot).....	2	Portable Screening Conveyor Plant.....	5
Loaders.....	52	Stationary Power Plants.....	12
Heaters.....	52	Crushing Plants.....	2
Sand Driers.....	19	Sand and Gravel Screen.....	1
Stripers.....	17	Snow Blowers.....	12
Maintainers.....	35	"V" Type Snow Plows.....	425
Arc Welders.....	47	One-Way Plows.....	525
Gradebuilders.....	85	Reversible Blade Snow Plow.....	14
Leaning Wheel Graders.....	22	Hand Hydraulic Units.....	16
Paint and Bead Mixers.....	16	Power Hydraulic Units.....	59
Power Sweepers.....	17	Full Hydraulic Units.....	412
Mulch Spreaders.....	24	Snow Wings, 10' Right.....	65
Power Shovels.....	8	Snow Wings, 11' Right.....	75
Moto-Patchers.....	4	Snow Wings, 11' Left.....	1
Conveyors.....	7	Snow Wings, 12' Right.....	483
Eductors.....	7	Snow Wings, 12' Left.....	5
Planers.....	4	Snow Wings, 14' Right.....	31
Swamp Buggies.....	1		

New equipment, as listed hereunder, was purchased to replace obsolete and worn out equipment, and also to fill the district's demands for additional equipment:

Trucks.....	280	Levels.....	60
Power Graders.....	25	Transits.....	120
Wheeled Tractors.....	136	Trumeters.....	17
Crawler Tractors.....	11	Loaders.....	15
Conveyors.....	1	Rollers.....	9
Compressors.....	24	Hydro Seeders.....	7
Hydraulic Cranes.....	3	Bituminous Heaters.....	10
Emulsion Distributors.....	3	Highway Scales.....	11
Eductors.....	3	Power Sweepers.....	5
Earth Augers.....	2	Mulch Spreaders.....	12
Aggregate Driers.....	2	Paint and Bead Mixers.....	2
Gradebuilders.....	11	Asphalt Plants.....	1
Special Sander Bodies.....	40	Crushing Plants.....	1
Portable Concrete Screening Plants.....	4	Ditchers.....	1
Stationary Power Plants.....	8	Cold Patch Mixers.....	1
Gradalls.....	2	Moto-Patchers.....	1
Paint Units.....	2	Wobble Wheel Rollers.....	4
Miscellaneous Trailers.....	1	Low Bed Trailers.....	2
Pole Trailers.....	1	Tilt Trailers.....	2
Maintenance Kettles.....	15	Lab., Office and Sleeper Trailers.....	63

An improved method of maintaining inventory and costing records has been established through the medium of the Business Machine Card System, which provides a constant control of location, value, cost of operation and repair, on a monthly basis, and permits immediate availability of all relevant information for analysis and statistical purposes.

The Central Training School at Downsview conducted 23 courses: for highway equipment supervisors, mechanic supervisors, shop foreman, mechanics, apprentice mechanics, and welders.

The Safety Group of the section supervises equipment operator's training and safe drivers' programmes — an annual "Rodeo" is held in which all districts compete.

The Safety Supervisors held safety meetings and lectures throughout the Province.

In conjunction with representatives of the Operations, Personnel and Traffic branches, all vehicle accident reports are reviewed.

The section supervised the design and building of one new type zone striper for dual lane striping, and two for standard use.

An addition to the Equipment Section garage is under construction, and will provide better facilities for processing and development of new equipment.

Land Surveys Section

W. D. Ratz, Superintendent

The Land Surveys Section is responsible for carrying out all land surveys and the preparation and registration of all plans for the acquisition or disposal of land and the assumption, reversion, designation and closing of highways.

It was necessary to employ a limited number of Ontario Land Surveyors to supplement the permanent staff of surveyors in order to cope with the proposed construction programme.

For the fiscal year the Land Surveys Section obtained registration of 2,079 plans in the proper Land Titles or Registry Offices.

During the past fiscal year 148.40 miles of highway were designated as controlled access highways. The total mileage of controlled access highways in the Province now stands at 1,001.11 miles.

Land surveys have been completed on 8,567 of the 8,770 miles of King's Highways and on 489 of the 2,371 miles of secondary highways.

Seven training courses were conducted during the year. Of the 136 candidates who attended these courses 117 qualified. In addition to these regular courses short courses were conducted to train property section valuers and title searchers.



Highways Maintenance Equipment — A few of the many types of equipment used by the Department, as follows: Left to right, Plow Trucks, Electric Maintenance Tower Truck, Gradall, Traveloader, Front End Loader, Power Grader, Snow Blower, Roller and Rotary Mower.

This section is continuing with its apprenticeship programme for Ontario Land Surveyors. In March of this year ten apprentices were successful in the final examinations of the Association.

The Surveys Amendment Act of 1957 provides that the surveyed limits of all Department of Highways' lands are true and unalterable boundaries. This was enacted so that registered descriptions of lands adjoining highways, which have been proven inaccurate by recent surveys made by the Department, could be corrected by Local Masters of Titles on application of the Department. It will also serve a useful purpose in providing an unalterable boundary to which descriptions of adjoining lands may be tied.

After the passing of the Highway Improvement Act, 1957, it was found necessary to institute a "Procedural Guide" to implement the registration and execution of plans prepared according to the revised Act. The plans are classified by letter and name.

TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	No. OF PLANS	MILEAGE
<i>Plan Types A-H Inclusive — Acquisition of Lands</i>			
"A"	Land Plans.....	1,208	775.162
"B"	Amended Land Plans.....	87	.....
"C"	Land Plans Acquiring Limited Interest.....	10	1.429
"D"	Plans of Abandonment.....	108	18.148
"E"	Crown Land Plans.....	116	103.573
"F"	Amended Crown Land Plans.....	2	.....
"G"	Crown Land Abandonment Plans.....	.....	.....
"H"	Navigable Waters Protection Act Plans (Crown).....	12	2.104
<i>Plan Types I-M Inclusive — Assumption of Existing Highways</i>			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway.....	27	84.518
"J"	Amended Preliminary Assumption Plans.....	3	.....
"K"	Assumption Plans.....	109	209.448
"L"	Assumption Plans.....	33	43.905
"M"	Amended Assumption Plans.....	1	.....
<i>Plan Types N-P Inclusive — Designation of Highways</i>			
"N"	Proposed Highway Plans.....	20	.....
"O"	Highway Plans.....	186	422.162
"P"	Controlled Access Highway Plans.....	12	45.290
<i>Plan Types Q-T Inclusive — Transfer and Closing of Highways</i>			
"Q"	Reversion to Road Authority.....	4	10.200
"R"	Transfer to Municipality.....	61	70.846
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council.....	31	16.462
"T"	Road Closing Plans (Ontario Municipal Board).....	37	.....
<i>Plan Types U-X Inclusive and others — Miscellaneous and Special Plans</i>			
"U"	Plans to Illustrate Descriptions.....	497	112.426
"V"	Survey Plans of Boundaries — Supplementary.....	10	13.131
"W"	Indian Affairs Plans.....	6	19.035
"X"	Connecting Link Agreements.....	8	7.040
	Planting and Electrical Plans.....	20	.....
	St. Lawrence Seaway Project.....	.....	.....
	Miscellaneous Plans.....	71	49.081
TOTALS.....		2,679	2,003.960

See appendices section in this annual report volume for details of Controlled Access highway plans, and designations and reversions of sections of the King's Highway and Secondary Highway systems.

Office Services

F. C. W. Flegg, Superintendent

The Office Services Section located at Downsview Ave. is responsible for:

1. the procurement and distribution of office supplies, furniture, equipment, stationery and medical supplies to all branches of the Department;
2. the operation of Central Records;
3. providing mailing service for all Departmental offices in the Toronto area;
4. reproducing by various methods forms, reports, etc., for the various branches of the Department;
5. microfilming records;
6. the operation of Fort Henry at Kingston, Ontario.

In general, all items required for Department operation were in normal supply.

Value of items requisitioned and supplied during the fiscal year ending March 31, 1958, was:

Stationery and White Prints.....	\$ 664,231.37
Printing Supplies.....	20,801.12
Medical Supplies.....	7,207.62
Equipment and Furniture.....	412,966.35
	<hr/>
	\$1,105,206.46

To reduce filing space and provide a convenient means of reference to records, a microfilm service was established in January, 1957. The Record Retention and Disposal Unit for the year ending March 31, 1958, microfilmed approximately 3,495,000 pieces of material on 16 m.m. film, which was condensed on 474 rolls of film. This allowed material weighing approximately 50 tons to be destroyed. In addition, during the month of March, 1958, microfilming of engineering plans on 36 m.m. film was commenced, and approximately 73,500 lineal feet were completed.

Property Section

H. Barry, Superintendent

The Property Section is responsible for the acquisition of all land required for highway purposes and the management of surplus properties.

During the year, there was a slight decrease in the number of agreements negotiated over the previous year, with continuing improvement in the various processes toward payment.

A total of 4,929 new agreements were negotiated with property owners, which added to the carryover of 1,504 from the previous year, totals 6,433. Of these, 4,844 were paid during the year.

During the year, 1,346 surplus properties were recorded, which added to the carryover of 1,565 from the previous year totals 2,911. Of these, 856 were disposed of, producing a revenue of \$728,000.

Recording of surplus properties has been given an added impetus by utilizing district personnel to locate and record these items and a comprehensive method of recording, by regions, is progressing.

Weekly meetings have been established with officials of Operations, Planning and Design, and Land Surveys, resulting in a much more satisfactory method of calling contracts on schedule.

A Pre-Appraisal Group has been set up and a course has been given to a number of property agents who are gradually being absorbed into this new function. A further enlargement of this phase is in progress.

Surplus properties are being disposed of by public auction and public tendering procedures.

Decentralization of the main office is under way, and the first regional office to open will be London, scheduled for April 8th, 1958, and Kingston due September 2nd, 1958.

During the year, sound and recording equipment was acquired for use in public meetings at which property owners and Department officials may discuss and exchange views on proposed work projects.

The purchase of property for Highway 401 progressed satisfactorily and is expected to be completed early in the new fiscal year.

Sign and Building Permits Section

E. G. Crowhurst, Superintendent

The Sign and Building Permits Section is responsible for the administration of regulations in connection with the issuing of permits for signs, buildings and gasoline pumps adjacent to secondary roads, the King's Highway and controlled access highways.

Building Permits

Number of Permits Issued.....	4,364
Approximate Valuation of Buildings.....	\$44,439,367.00

Gasoline Pumps

Number of Permits Issued.....	3,829
Permit Fees.....	\$39,935.00

Sign Licences

Number of Licences Issued.....	3,540
Value Received.....	\$22,636.50

NOTE: Licences are issued according to the calendar year, January 1st to December 31st.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section is responsible for the purchase of all material and equipment, also the administration of Bailey bridge depots, Central Stores Warehouse in Toronto and the supervision of all district stockrooms.

During the 1957-58 fiscal year, the value of materials shipped from Central Stores increased to \$1,727,069.86. The increasing volume of materials handled by central stores has necessitated a 13,000 sq. ft. addition to warehouse facilities, which is under construction.

Reinforcing steel was fabricated and supplied to 94 contracts from Central Stores during the year.

Materials were supplied for 45 Bailey bridges (1500 tons) from stock depots at Downsview, London, North Bay and Fort William. A total of 42 bridges were dismantled and returned to stock.

Approximately 1500 tons of parts were rehabilitated and painted in the storage depots. At the close of the fiscal year a total of 166 Bailey bridges were in service on highways throughout the province.

In disposing of obsolete and scrap materials, a total of 170 individual sales were conducted. A total revenue of \$118,150.30 was realized from this source.

Inventories and control procedures on the districts were periodically inspected and modified as required.

Construction materials remained in ample supply during the year.

A total of 1,001 supply contracts were processed, involving the analysis of 5,026 individual bids.

Tenders Section

W. Whittle, Tenders Secretary

The Tenders Section is responsible for processing of tenders on D.H.O. engineering projects, property sales, supply purchases and obsolete equipment sales.

This section also arranges the weekly public openings of the engineering tenders in addition to supplying contractors with tendering information and forms. Tendering material is also supplied to potential property sale bidders, and to those firms requiring tendering material on D.H.O. purchases of heavy and automotive equipment.

The office is responsible for ensuring that all tendering procedures are followed and recommendations made where inadequacies are found or revisions are required. It is also responsible for placing tender advertisements and the processing of respective accounts.

In October, 1957, the Department inaugurated a pre-qualification system for certain types of contracts, and a tendering procedure was prepared.

A procedure was set up to process bids on contracts of less than \$10,000.00 in value.

Tenders were called as follows:

(a) *Engineering Contracts*

Contracts called.....	417
Tendering material released (tender forms only).....	13,700
Tendering material released (plans, profiles, etc.).....	3,945
Tenders processed.....	3,012

(b) *Property Sale Transactions*

Sales	353
Tenders processed	1,104

(c) *Material Requirements*

Number of inquiries	1,001
Number of tenders processed.....	4,884

(d) *Obsolete Material*

Number of sales.....	26
Tenders processed	113

PERSONNEL BRANCH

Director of Personnel, J. POGUE

The Personnel Branch administers the selection and engagement of personnel, staff movements, training, organization and classification, personnel records, and provides guidance and advice on all personnel functions.

Employment Section

The Employment Section is responsible for consulting with Branch heads and District Engineers to ascertain employment requirements and for carrying out recruitment, selection, placement and transfers.

There were 4,172 replacements and additions to staff during the period from April 1, 1957, to March 31, 1958. This figure includes 808 seasonal workers and 581 students. The number of persons hired by the Employment Section of the Personnel Branch was 976, the remainder of the total number employed being recruited locally by the District and Regional Offices. The employees hired by the Employment Section were assigned as follows:

Deputy Minister's Branch.....	70
Personnel Branch.....	11
Services Branch.....	269
Planning and Design Branch.....	289
Motor Vehicles Branch.....	80
Municipal Roads Branch.....	12
Chief Engineer's Branch.....	155
Financial Comptroller's Branch.....	90
	<hr/>
	976

Over 4,000 personal interviews were conducted by the Employment Section during the year.

An extensive recruiting programme was carried out in the autumn of 1957 to obtain civil engineering graduates. Personal letters and special recruiting pamphlets were mailed to every member of the graduating classes of Queen's University and the University of Toronto, and recruiting literature was sent to the Placement Officers of the remaining Universities throughout Canada. Interviews were conducted by the Personnel Branch at the University of Toronto and Queen's campuses. The recruiting programme for Civil Engineers was exceptionally successful, and 45 members of the 1958 civil engineering graduating classes accepted employment with the Department.

The general economic decline during the latter part of the year and the resultant widespread unemployment considerably increased the number of applicants seeking employment with the Department.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

At the end of the fiscal year our total work force was 11,765 and was distributed as follows. The figures for the fiscal year 1956-57 are also shown for purposes of comparison.

	1957-58	1956-57
Minister's and Deputy Minister's Branch.....	190	138
Financial Comptroller's Branch.....	238	202
Services Branch.....	1,156	1,046
Planning and Design Branch.....	927	755
Operations Branch.....	9,127	8,327
Personnel Branch.....	52	41
Motor Vehicles Branch.....		405
Municipal Roads Branch.....	75	67
	<hr/> 11,765	<hr/> 10,981

The total work force of 11,765 includes all salaried and hourly-rated employees and was grouped as follows:

	1957-58	1956-57
Permanent and Temporary Staff.....	3,499	1,936
Casual Staff.....	5,398	6,459
Labour — Established.....	322	387
Unestablished.....	2,546	2,199
	<hr/> 11,765	<hr/> 10,981

It should be noted that on July 1, 1957, the staff of the Motor Vehicles Branch was transferred from the Department of Highways to the newly created Department of Transport. This involved the transfer of 449 employees.

During the year 34,253 personnel transactions were carried out by the Personnel Branch. These were as follows:

New Appointments.....	4,172
Terminations.....	3,286
Salary and Other Record Changes.....	26,795
	<hr/> 34,253

During the year the rate of appointments from Casual to Permanent and Temporary staff was greatly increased as the following figures indicate.

Casual to Permanent.....	1,539
Temporary to Permanent.....	345
Casual to Temporary.....	75
	<hr/>
TOTAL.....	1,959

Organization and Classification Section

This Section is responsible for administering and approving changes in wages, salaries and classifications and for the development of organization plans for the various Branches, Districts and Sections in the Department; for the preparation of job descriptions and manuals, and for rendering advice and assistance to the supervisory staff regarding organization principles and practices.

At the beginning of the year two Sections — the Organization and Procedures Section and the Salary and Classification Section — were responsible for the administration of salaries and the development of organization plans for the Department. In October, 1957, these sections were combined in the Organization and Classification Section with beneficial effect. Branch heads and District Engineers now deal with one group only, which is in full possession of all the facts affecting their organizations, the classification of the positions and the salaries of their employees. This has resulted in a more expeditious handling of transactions concerning employee promotions, changes of salary and transfers.

During the year, further organizational studies were made, amongst which were the Engineering Audit Section, the Office Services Section, the Planning and Design Branch and the balance of the Districts, including the ferry operations at Glenora, in Kingston District, and at St. Joseph's Island in Sault Ste. Marie District.

As a result of recommendations made by the section to the Civil Service Commission, several new classifications were established, including a complete new series to be applied to the ferry crews. Submissions were also made to the Commission for the establishment of other classes, but approval had not been received at the end of the fiscal year.

Besides the normal flow of promotions and other transactions taking place during the year, salary revisions, effective 1st October, 1957, were processed for practically all of the employees of the Department.

As these revisions were not announced by the Civil Service Commission until mid-December, the volume of work involved delayed the section from starting work on the merit salary increases which are awarded on the first of April each year. However, due partly to the revised organization of the section, and partly to the new procedure adopted this year by the Civil Service Commission for the processing of Departmental recommendations, the section was able to submit the recommendations of the Department to the Commission in adequate time for the revisions to be incorporated in the employee's salary cheques in April.

In order to protect the interests of all employees, all cases where no revision of salary was recommended by the Branch Head or District Engineer were investigated by the Section, and as a result, a number of additional recommendations were made.

During the year the section investigated and settled a number of complaints by employees regarding salary or classification.

The work of the section was materially assisted by the advice and guidance received on request from the Civil Service Commission, with which a very satisfactory working relationship has been maintained.

Training Section

The purpose of this Section is to establish and maintain training courses as required for the more efficient operation of the Department.

The D.H.O. Training School at Downsview was established to overcome the chronic shortage of trained technical personnel in the Department in April of 1957. It was felt that this problem could be solved by training our own staff. The training programme was originally started to solve specific requirements in the Construction field but has increased in scope and now covers practically every type of work in the Department.

From April 1, 1957, to March 31, 1958, a total of 836 employees took D.H.O. training courses. Some of the courses that were held during this period were as follows: Rodman to Jr. Instrumentman's Course, Mechanics Trades Test Course, Automotive Apprentice Courses, Traffic Analyst's Course, Jr. Draughtsman Courses, Asphalt, Concrete and Soils Inspector's Courses, O.L.S. Courses.

In September of 1957 a Training Committee was established to have complete control of all training in the Department; to maintain a course for Professional Engineers, and to maintain courses as required for all other Department personnel. J. Pogue, Director of Personnel, was appointed as Chairman, and the other members of the Training Committee were established as follows:— W. J. Fulton, Deputy Minister; J. G. McMillen, Financial Comptroller; J. Walter, Director of Planning and Design; H. W. Adcock, Manager of Operations; A. T. C. McNab, Superintendent of Engineering Audit; C. A. Robins, Director of Services; J. V. Ludgate, Municipal Roads Engineer.

A training course for engineers was inaugurated on November 5, 1957. This training course is basically a job rotation programme with 3 weeks of lectures at our training school in Downsview. The course is of 64 weeks' duration. A total of ten engineers were selected from our Planning and Design Branch, Operations Branch and Municipal Roads Branch, and were attached to the Personnel Branch in order that proper control of their training could be maintained. The engineers receive training in the following Sections — District Construction, District Maintenance, Contract Control, Engineering Audit, Traffic, Statistics and Economics, Priority and Scheduling, Road Design, Bridge Design, Location, Municipal Roads, and Materials and Research.

It is felt that this course will enable the participants to gain a sound working knowledge of the various aspects of highway engineering and to determine in which field of highway engineering they will make their permanent careers and will be invaluable in enabling the participants to obtain a broader perspective in relation to their jobs.

The training Committee has given approval for the initiation of a course for new graduates in May of 1958, and a further course for employees in the autumn of 1958.

In April, 1957, a permanent Secretary of the Highways Departmental Council was appointed, and since that time there has been a renewed interest throughout the Department in the Council system.



First Tri-Level Traffic Interchange in Canada, pictured above, is the \$4,225,000 structure at intersection of Dundas Street, upper level, which overpasses lines of the Canadian Pacific Railway in Etobicoke Township of Metropolitan Toronto. Royal York Road, lower level, underpasses the railway.



Humber River Junction of the Queen Elizabeth Way and Metropolitan Toronto's Fred G. Gardiner Expressway. The first section of this Expressway was opened on August 8, 1958.

REPORT ON MUNICIPAL ROADS—1957**J. V. LUDGATE, *Municipal Engineer***

The municipal councils, the elected representatives of the people of the Province, carried out record road programmes in 1957 involving expenditures aggregating more than \$107,500,000. Each local governing body was aided in its task by the engineering services of the Municipal Roads Branch, which dispensed operational guidance, technical advice and expert supervision pertaining to the construction and maintenance of public roads and bridges. Detailed scrutiny of expenditures and calculation of the subsidies authorized by the provisions of The Highway Improvement Act constituted an important part of the duties of the municipal engineers and their assistants.

Indicative of the joint efforts of municipal and Department personnel to cope with the problem of providing adequate travel facilities for the increased volumes and weights of modern transport on municipal roads the following table presents a five-year summary combining the subsidies accruing from expenditures authorized by by-law with the supplementary aid provided from Development Road funds.

It will be noted that the municipal outlay for road and bridge upkeep and the financial assistance provided by the Act have almost doubled in the five-year period.

EXPANSION OF DEPARTMENTAL AID TO MUNICIPALITIES (IN \$1,000's)

YEAR	EXPENDITURES FROM BY-LAW FUNDS	DEPARTMENTAL SUBSIDY	DEVELOPMENT ROAD AID	TOTAL AID
	\$	\$	\$	\$
1953	54,452	27,190	1,759	28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267

During the year Departmental assistance through monetary aid and engineering service was accorded to 661 rural municipalities and to 340 urban centres. The rural organization included 37 counties, 572 incorporated townships, 29 Indian reserves and 23 improvement districts. The urban total consisted of one metropolitan area, 29 cities, 8 separated towns, 147 towns and 155 villages.

Several changes in municipal status, worthy of note, took place within the year. Improvement Districts were erected for Nakina in Thunder Bay and Gladstone in Algoma. Caledon East became an incorporated village in Peel County and Richmond Hill in York became a town. Burlington Beach was annexed to the City of Hamilton.

In regions not municipally organized the services of the Branch were extended to boards operating under the provisions of the Statute Labour Act and to groups of individuals intent upon improving the roads which serve their isolated settlements. Financial aid amounting to \$1,002,111.28 was dispensed among 564 projects throughout Northern Ontario, including the activities of 175 statute labour boards.

Distribution of Municipal Aid

The road expenditures in organized municipalities were governed by appropriation by-laws, approved by the Minister. The provision of funds was based upon tax levy plus the estimated statutory subsidy. A summary of mileages, approved by-law totals, approved expenditures and departmental subsidies applying to each type of municipal organization is given below:

CORPORATION STATUS	ROAD MILEAGE	APPROVED APPROPRIATION	APPROVED EXPENDITURE	DEPARTMENTAL SUBSIDY
Metropolitan	289.32	\$ 19,963,700.00	\$ 17,866,365.20	\$ 8,933,182.60
County*	9,342.00	26,995,335.00	25,310,514.10	13,832,163.98
Township†	50,509.90	36,498,610.00	33,147,636.96	18,530,211.67
Urban	7,830.11	32,346,669.00	25,546,531.26	10,188,038.48
TOTALS	67,971.33	\$115,804,314.00	\$101,871,047.52	\$ 51,483,596.73

* Includes suburban road commissions.

† Includes Indian reserves and improvement districts.

A total of 4,702.73 miles in unorganized townships is not included here.

METROPOLITAN TORONTO

(Under the Municipality of Metropolitan Toronto Act)

During the year 1957, the metropolitan organization expended \$17,866,365.20 on its road system. Corresponding outlays in previous years were \$14,879,325.75 in 1956; \$11,063,871.27 in 1955, and \$6,134,960.48 in 1954. Classification of last year's outlay as to construction and maintenance is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$11,070,444.85	\$ 2,795,936.32	\$13,866,381.17
Bridges and culverts.....	3,061,506.74	186,150.34	3,247,657.08
Winter control.....		752,326.95	752,326.95
TOTAL APPROVED EXPENDITURE....	\$14,131,951.59	\$ 3,734,413.61	\$17,866,365.20

In addition to the completion of 4.43 miles of new thoroughfares, 10 bridge overpass and underpass structures and subways were built; 5.73 miles of roads and streets were widened and rebuilt and 13 miles of pavements resurfaced. Many intersections throughout the area were channelized or otherwise improved.



Hart Bridge over the Severn River on Ontario County Road No. 21, about $\frac{1}{4}$ mile south of Washago.
(Huntsville)

Aid Rural Development

Each year shows progress in long-range
program of new bridge construction
on Ontario's Municipal Roads system



Neustadt Bridge over the Saugeen River on Grey County Road No. 7, three miles south of Hanover.
(Owen Sound)

COUNTY ROAD SYSTEMS

(Under Part IV, The Highway Improvement Act, 1957)

In Appendices 5, 6, 7 and 11, details of county road mileages, types of surfaces, expenditures and subsidy payments are presented in detail. A summarized compilation of construction and maintenance disbursements (inclusive of suburban road costs) is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$12,558,677.20	\$ 7,453,071.12	\$20,011,748.42
Bridges and culverts.....	3,615,770.27	307,252.77	3,923,023.04
Winter control.....		1,375,742.64	1,375,742.64
TOTAL APPROVED EXPENDITURE....	\$16,174,447.57	\$ 9,136,066.53	\$25,310,514.10

The work accomplished by the county road organizations as a result of these expenditures is detailed in county engineer's reports and is totalled below:

Construction Items

1. New or rebuilt gravel and stone surface.....	184.8 miles
Low-cost bituminous surfaces.....	327.7 "
Pavements.....	249.7 "
COMPLETED ROAD CONSTRUCTION.....	762.2 "
Graded to standard cross-section.....	374.5 "
2. Bridges (10-foot span and over); Concrete, 97; Steel, 16; Timber, 4; Total, 117.	
Culverts (under 10-foot span); Concrete, 48; Metal Arch, 16; Total, 64.	
Pipe culverts installed.....	1,800

Maintenance Items

1. Roadside ditching.....	173.2 miles
Bituminous surface treatment.....	595.6 "
Dust prevention with oil.....	371.8 "
Dust prevention with calcium.....	2,768.0 "
Clay gravel stabilization.....	24.0 "
Resurfacing: Pit-run gravel.....	110,196 cu. yds.
Crushed gravel.....	673,390 " "
Crushed stone.....	102,438 tons
2. Snow control: Mechanical equipment operations.....	9,600.1 miles
Snow fence protection.....	1,412.8 "
3. Weed and brush control: by spraying.....	5,378.0 "
by cutting.....	5,853.4 "
4. Repaired bridges, 153; repaired culverts, 519.	

COUNTY SUBURBAN ROADS

(Under Part V, The Highway Improvement Act, 1957)

Thirty-three suburban road commissions have to do with a specified mileage of roads leading to and from the cities and separated towns. Particulars concerning their 1957 operations are summarized below:

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	35.00	\$ 236,354.18	\$ 140,638.75
Carleton.....	Ottawa.....	106.10	599,615.77	356,596.43
Elgin.....	St. Thomas.....	19.80	33,815.47	19,487.20
Essex.....	Riverside.....	1.00	14,058.26	7,029.13
	Windsor.....	41.00	129,651.09	65,952.81
Frontenac.....	Kingston.....	43.60	91,825.91	47,948.70
Grey.....	Owen Sound.....	35.00	36,617.04	18,462.57
Hastings.....	Belleville.....	6.20	20,343.96	10,397.23
Kent.....	Chatham.....	11.46	72,102.18	56,838.05
Lambton.....	Sarnia.....	22.06	146,204.11	79,478.78
Lanark.....	Smiths Falls.....	6.00	9,435.50	4,739.38
Leeds and Grenville.....	Brockville.....	20.70	30,620.62	15,629.27
	Gananoque.....	3.30	11,465.86	5,732.93
	Prescott.....	1.40	10,767.08	5,698.50
	Smiths Falls.....	5.30	9,849.67	4,987.96
Lincoln.....	St. Catharines.....	23.89	115,884.34	58,999.38
Middlesex.....	London.....	64.25	351,434.16	183,322.37
Northumberland and Durham.....	Trenton.....	12.75	33,855.69	20,095.97
Ontario.....	Oshawa.....	24.60	94,329.26	47,341.51
Oxford.....	Ingersoll.....	4.29	1,065.45	575.27
	Woodstock.....	11.19	76,739.19	44,121.14
Perth.....	St. Mary's.....	5.00	12,958.50	6,479.25
	Stratford.....	18.55	46,225.97	28,312.16
Peterborough.....	Peterborough.....	70.00	96,461.26	48,934.94
Stormont, Dundas and Glengarry.....	Cornwall.....	61.00	151,708.55	75,854.28
Waterloo.....	Galt.....	18.70	57,827.57	29,655.73
	Kitchener.....	56.40	203,575.19	106,291.83
	Waterloo.....	11.90	38,584.44	19,881.37
Welland.....	Niagara Falls.....	19.50	52,812.07	27,261.22
	Welland.....	15.00	21,832.56	11,150.97
Wellington.....	Guelph.....	38.50	54,792.49	28,846.10
Wentworth.....	Hamilton.....	105.13	584,363.08	311,514.31
York.....	Toronto and York.....	182.33	1,705,932.78	936,587.94
TOTALS.....	.....	1,100.90	\$5,153,109.25	\$2,824,843.43

Following is a synopsis of the work accomplished:

Construction Items

Clearing and grubbing.....	70.7 miles
Grade construction.....	67.6 "
Gravel and stone surfacing.....	1.5 "
Bridges (10-foot span and over); Timber, 37; Total, 37.	
Culverts (under 10-foot span); Timber, 182; Metal Arch, 42; Total, 224.	
Pipe culverts installed.....	872

Maintenance Items

Roadside ditching.....	353.7 miles	Snow control:	
Brush and weed cutting.....	581.2 "	Pit-gravel applied.....	349,650 cu. yds.
Snow control:		Crushed gravel and	
Mechanical equipment		stone applied.....	16,273 " "
operation.....	1,803.7 "	Clay or sand applied.....	32,000 " "
Snow fence protection.....	132.2 "	Bridges repaired.....	261
		Culverts repaired.....	1,249

INCORPORATED TOWNSHIPS

(Under Section VI, The Highway Improvement Act, 1957)

A decisive upswing in township road construction became evident in 1955 with an expenditure of some \$6,545,000, which almost doubled the average expenditure of several previous years. The effort continued in 1956 with an outlay of \$10,350,000 for construction and experienced further impetus in 1957 as indicated below.

Worthy of note, also, was a 20% reduction in the cost of snow control due to more favourable winter conditions.

Expenditures on bridges and culverts compared closely with those of previous years.

Data covering expenditures and subsidies are presented in Appendix 8. Surface types are tabulated in miles in Appendix 11. In the following table a classification of township road disbursements is given:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$11,525,435.36	\$14,789,924.90	\$26,315,360.26
Bridges and culverts.....	3,613,087.48	793,272.50	4,406,359.98
Winter control.....		2,425,916.72	2,425,916.72
TOTAL APPROVED EXPENDITURE....	\$15,138,522.84	\$18,009,114.12	\$33,147,636.96

The above expenditures were incurred in carrying out the following operations:

Construction Items

1. New or rebuilt gravel and stone surfaces.....	512.9 miles
Low-cost bituminous surfaces.....	219.4 "
Pavements.....	136.8 "
COMPLETED ROAD CONSTRUCTION.....	869.1 "
Graded to standard cross-section.....	1,901.8 "
2. Bridges (10-foot span and over); Concrete, 244; Steel, 28; Timber, 85; Total, 357.	
Culverts (under 10-foot span); Concrete, 449; Metal Arch, 269; Timber, 222; Total, 940.	
Pipe culverts installed.....	6,628

Maintenance Items

1. Roadside ditching.....	2,428.5 miles
Bituminous surface treatment.....	610.6 "
Dust prevention with oil.....	1,238.2 "
Dust prevention with calcium.....	5,270.1 "
Clay gravel stabilization.....	74.0 "
Resurfacing: Pit-run gravel.....	1,190,834 cu. yds.
Crushed gravel.....	2,176,117 "
Crushed stone.....	739,216 tons
2. Snow control: Mechanical equipment operations.....	48,782.0 miles
Snow fence protection.....	3,495.5 "
3. Weed and brush control: by spraying.....	22,622.2 "
by cutting.....	16,090.5 "
4. Repaired bridges, 978; repaired culverts, 5,291.	



Old Blair Bridge over Grand River near Town of Preston. (Stratford)

URBAN ROADS AND STREETS

(Under Part VII, The Highway Improvement Act, 1957)

The subsidies paid to cities, towns and incorporated villages were based on expenditures in 1957 amounting to \$25,546,531.26, as compared with \$24,456,373.43 in 1956 and \$21,703,070.95 in 1955. The total is distributed as to construction and maintenance as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads and streets (winter control excepted).....	\$11,768,960.03	\$ 9,279,053.73	\$21,048,013.76
Bridges and culverts.....	805,957.70	474,010.05	1,279,967.75
Winter control.....		3,218,549.75	3,218,549.75
TOTAL APPROVED EXPENDITURE.....	\$12,574,917.73	\$12,971,613.53	\$25,546,531.26

Appendix 9 presents a review of city, town and village expenditures toward which Department aid has been granted during the past 10 years. In Appendix 10 urban road and street surfaces are classified as to surface types in the counties and districts of the Province; and in Appendix 13 is to be found a distribution within each municipal district of urban expenditures in cities, towns and incorporated villages respectively.

DEVELOPMENT ROADS

(Under Part VIII, The Highway Improvement Act, 1957)

The sum of \$5,783,209.04 was expended during the fiscal year on 189 projects, involving 986 miles of road, temporarily under Department-Municipality agreements by virtue of current and earlier designations as Development Roads. Of these, 59 projects were completed and their designations revoked. New designations numbered 48, and two former undertakings were redesignated to provide for further improvements. A total of 133 remained unfinished and were carried forward into our 1958 programme.

Of the above total \$3,219,427.87 was expended upon 42 county road projects toward which the application of special aid was deemed expedient to supplement county by-law funds in the effort to rebuild bases to cope with increased vehicle weights and to provide pavement surfaces where considered essential.

The locations, mileages and expenditures pertaining to the projects in process during 1957, are tabulated in Appendix No. 00.

ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

(Under Part IX, The Highway Improvement Act, 1957)

The Department continued to co-operate with statute labour boards and groups of settlers in northern areas devoid of municipal organization. In settlements operating under the Statute Labour Act, with road commissioners elected to function as a board in applying the proceeds of a statute labour levy to the betterment of roads, the Department contributed on a dollar-for-dollar basis toward road work performed or commuted. Bridge and culvert outlay was subsidized at an 80% rate, except for structures the cost of which was considered beyond the financial ability of the board. In such cases the Department paid the total cost.



New Blair Bridge on Galt Suburban Road No. 14, spanning the Grand River near the Town of Preston, Waterloo County. (Stratford)

Urban Centre Bridges



Highbury Avenue Overpass of C.P.R. in the City of London.



Vauxhall Bridge on Egerton Avenue over the Thames River in the City of London.



Bridge over River Thames on Wharnccliffe Road in the City of London.

The aid supplied to settler group in areas with insufficient population to warrant Statute Labour Act control was likewise on a dollar-for-dollar basis, with bridge expenditures financed completely by the Department.

**SUMMARY OF UNINCORPORATED MUNICIPALITIES
EXPENDITURES IN THE FISCAL YEAR 1957-58**

MUNICIPAL DISTRICT	Value of Statute Labour or other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10 — Nipissing.....	\$ 3,367.56	\$ 10,184.21	\$ 13,551.77	75
11 — Muskoka.....	12,909.73	14,434.27	27,344.00	53
12 — Parry Sound.....	57,061.43	158,833.77	215,895.20	74
13 — Nipissing.....	38,654.07	86,591.12	125,245.19	69
14 — Temiskaming and Cochrane South.....	45,026.91	181,839.03	226,865.94	80
16 — Cochrane North.....	59,107.01	141,155.63	200,262.64	70
17 — Sudbury.....	48,985.22	72,022.48	121,007.70	60
18 — Algoma.....	44,476.71	104,819.97	149,296.68	70
19 — Thunder Bay.....	38,936.84	118,507.22	157,444.06	75
20 — Kenora and Rainy River..	49,023.01	111,892.85	160,915.86	70
Adjustment District No. 17 accounts receivable.....	\$397,548.49 -1,830.73	\$1,000,280.55 +1,830.73	\$1,397,829.04	72
TOTALS.....	\$395,717.76	\$1,002,111.28	\$1,397,829.04	



Grading, a day labour project, on the River Road, Township of North Cayuga, Haldimand County, for construction of new bridge on improved alignment, which went into full service during the summer of 1957. This Hamilton District Municipal Roads project is located at Lot XII, Jones Tract, on Second Concession south of the Talbot Road. Inset shows the new concrete and reinforced steel structure.

SUMMARY OF MUNICIPAL ROAD IMPROVEMENTS, 1957

In the following pages is presented a condensed resume of construction and maintenance operations, together with equipment and land purchases, by the road organizations in the counties and townships constituting each municipal district, as reported by the Department engineers.

DISTRICT 1—(3 counties, 39 townships, 36 urban municipalities)

Essex—Construction: 20 miles low-cost bituminous pavement, 46 miles stabilized base, 77,000 c.y. pit run and 26,000 c.y. crushed stone on new grades; 2 steel and 4 concrete bridges.

Maintenance: 100 miles calcium dust laying; 17 miles stabilization with salt; 258 miles weed spraying; 24,000 c.y. pit run and 6,000 c.y. crushed stone; 3 bridges, 24 culverts repaired.

Purchases: 1 tar kettle, 1 weed sprayer, 1 pick-up and 2 heavy trucks.

Kent—Construction: 22 miles asphaltic concrete, 22 miles stabilized base, 13,500 c.y. pit-run and 4,000 c.y. crushed gravel on 14 miles new grade; 2 concrete bridges, 4 concrete and 42 pipe culverts.

Maintenance: 22 miles bituminous surface treatment, 4 miles calcium dust layer, 352 miles weed cutting; 9,000 c.y. pit-run, 1,000 c.y. crushed gravel and 1,000 c.y. crushed stone; 6 bridges and 8 culverts repaired.

Purchases: 1 automobile, 1 weed sprayer, 2 power mowers, 1 grader.

Lambton—Construction: 16 miles asphaltic concrete; 65,200 c.y. pit gravel, 800 tons crushed stone applied on new grades; 2 steel and 2 concrete bridges, 47 pipe culverts.

Maintenance: 2½ miles bituminous surface treatment, 135 miles calcium dust layer, 220 miles weed spraying and mowing; 7,000 c.y. pit run and 8,600 tons crushed stone applied; 4 bridges and 34 culverts repaired.

Purchases: 1 automobile, 1 asphalt distributor, 2 pick-up trucks, 1 medium truck chassis.

Townships—Construction: 7.3 miles asphaltic concrete, 26 miles low-cost bituminous pavements; 14,200 c.y. pit run, 13,200 c.y. crushed gravel, 17,000 tons crushed stone applied on new grades; 33 bridges, 23 culverts and 337 pipe culverts.

Maintenance: 53 miles bituminous surface treatment, 463 miles calcium and 46 miles oil dust layer; 2,514 miles weed spraying and 1,478 miles weed cutting; 157,500 c.y. pit run, 38,780 c.y. crushed gravel, 97,250 tons crushed stone; 55 bridges, 265 culverts repaired.

Purchases: 3 power graders, 4 heavy trucks, 1 light truck, 3 pick-up trucks, 1 power mower, 1 tractor with back-hoe attachment.

DISTRICT 2—(4 counties, 43 townships, 28 urban municipalities)

Elgin—Construction: 8.2 miles mulch, ¼ mile hot mix pavement; 10.1 miles reconstruction; 4 concrete culverts and 1 extension.

Maintenance: 53 miles bituminous treatment; 6 miles gravel resurfacing; 1 bridge painted, 7 bridges and 21 culverts repaired.

Purchases: 1 tandem truck, 1 distributor cab and chassis, 1 loader, 1 spreader, 2 pumps, 1 snowplow, 1 chain saw.

Middlesex—Construction: 21.4 miles mulch, 9.38 miles (17,676 tons) hot mix; 31.1 miles reconstruction using 261,800 c.y. pit run and 34,690 c.y. crushed gravel; 7 concrete bridges, 15 concrete and 462 pipe culverts.

Maintenance: 32.1 miles bituminous treatment, 7 miles oil and 80 miles calcium dust laying; 4,050 c.y. pit run and 33,200 c.y. crushed gravel resurfacing; 1 bridge and 1 culvert repaired.

Purchases: 6 trucks, 3 tractor-mowers, 1 sander, 1 steam generator, 2 weed sprayers; 2 garages; 2 sets traffic lights; 85 acres.

Norfolk—Construction: 3.4 miles mulch, 5.6 miles reconstruction using 39,780 tons crushed gravel and 10,345 tons crushed stone; 4,500 l.f. underdrainage; 1 timber and 4 concrete bridges, 15 pipe culverts.

Maintenance: 22 miles bituminous treatment, 3 miles oil dust laying; 243 miles snow clearing, 220 miles weed spraying; 4,086 tons crushed gravel resurfacing; 5 bridges and 13 culverts repaired.

Purchases: 2 sanders, 1 vibrator, 1 tractor-mower, 1 post hole digger, 1 truck, 2 automobiles, 2 truck chassis; 15 acres.

Oxford—Construction: 5.5 miles mulch, 9 miles new grading using 59,242 c.y. pit run and 27,635 tons crushed gravel; 3.7 miles underdrainage using 11,720 l.f. perforated pipe and 18,339 c.y. gravel; 1 steel and 4 concrete bridges, 58 pipe culverts.

Maintenance: 40 miles bituminous treatment, 104.7 miles calcium dust laying; 215 miles weed spraying; 35 miles snow fence, 215 miles snow clearing; 24,528 c.y. crushed gravel and 7,713 tons crushed stone resurfacing; 2 bridges and 10 culverts repaired.

Purchases: 30 acres.

Townships—Construction: 65.5 miles clearing and grubbing, 280 miles new grade using 66,122 c.y. pit run, 55,803 c.y. crushed gravel and 23,290 c.y. crushed stone; 5.5 miles mulch and 24.25 miles asphaltic concrete; 7,420 l.f. underdrainage; 2,674 rods fencing; 2,880 l.f. guide rail; 42 bridges and 14 culverts.

Maintenance: 15.6 miles bituminous treatment, 38.5 miles oil and 558 miles calcium dust laying; 30 miles clay stabilization; 7,056 miles weed spraying; 143,800 c.y. pit run, 327,350 c.y. crushed gravel and 28,250 tons crushed stone resurfacing; 55 bridges and 374 culverts repaired.

DISTRICT 3—(4 counties, 44 townships, 32 urban municipalities)

Huron—Construction: 4 concrete bridges, 2 concrete culverts, 20 metal culverts, 7 miles new grading using 90,000 c.y. pit run, 25,000 c.y. crushed gravel, 6 miles mulch.

Maintenance: 6 miles bituminous surface treatment, 140 miles dust laying, 400 miles of weed and brush cutting.

Purchases: 2 motor graders, 1 air compressor, 1 rubber tired compactor, 25 acres.

Perth—Construction: 2 concrete bridges, 20 metal culverts, 3,192 rods fencing, new grading with 5,000 c.y. pit run and 840 c.y. crushed gravel; 14 miles bituminous surface.

Maintenance: 12 miles roadside ditching, 160 miles dust laying, 230 miles weed spraying; crushed gravel 32,848 c.y. resurfacing.

Purchases: 30 acres.

Waterloo—Construction: 11.7 miles light bituminous surfaces, 44 pipe culverts, 2 concrete culverts, 9.9 miles new grading using 25,915 c.y. pit run and 86,103 c.y. crushed gravel.

Maintenance: 9.9 miles bituminous treatment, 93 miles dust laying, 211 miles weed and brush cutting, resurfacing 5,316 c.y. crushed gravel, repaired 1 bridge and 1 culvert.

Purchases: 6 trucks, 7 sand spreaders, 50.12 acres.

Wellington—Construction: 35 miles asphalt, 3 miles light bituminous surfaces, 28 pipe culverts, 4 concrete culverts, 1 steel bridge.

Maintenance: 40 miles bituminous surface treatment, 232 miles dust laying; 400 miles weed and brush cutting; resurfacing 144,034 c.y. crushed gravel.

Townships—Construction: 3.28 miles mulch, 2 miles bituminous treatment, reconstruction using 89,421 c.y. pit run, 82,899 c.y. crushed gravel and 7,928 c.y. crushed stone; 1,971 ft. guide rail; 41 concrete bridges, 1 wood bridge, 69 concrete culverts, 322 metal culverts.

Maintenance: 868 miles calcium dust laying, resurfacing 18,995 c.y. pit run and 487,524 c.y. crushed gravel, 9,345 c.y. crushed stone; 35 bridges repaired, 279 culverts repaired.

Purchases: 6 graders, 5 trucks, 2 snow plows, 1 snow plow wing, tractor with loader and mower, 1 power mower, 1 chain saw; 20.7 acres.

DISTRICT 4—(5 counties, 39 townships, 2 Indian reserves, 25 urban municipalities)

Brant—Construction: 11 miles bituminous surfacing; 3 concrete bridges.

Maintenance: 10 miles surface treatment, 60 miles dust laying, 126 miles snow plowed, 1 bridge, 2 culverts repaired; 1,000 c.y. crushed stone.

Purchases: 1 truck.

Haldimand—Construction: 5.19 miles bituminous surfacing; 1 concrete bridge, 2 concrete culverts, 24 pipe culverts installed.

Maintenance: 18 miles surface treatment, 12 miles dust laying, 165 miles snow clearing, 4,380 tons crushed stone; 1 bridge repaired.

Purchases: 1 tractor, 1 scraper, 2 trucks, front end loader.

Lincoln—Construction: 1 mile asphalt concrete pavement, 2 miles bituminous surfacing; 39,000 tons crushed stone; 1 concrete bridge, 5 concrete culverts, 1 metal arch, and 15 pipe culverts.

Maintenance: 10 miles surface treatment, 10 miles dust laying, 170 miles snow plowing, 15,000 tons crushed stone.

Purchases: 1 truck, 1 backhoe, traffic counters.

Welland—Construction: 5.5 miles asphaltic concrete pavement, 23 miles bituminous surfacing, 52,000 tons crushed stone; 2 bridges, 6 metal arch culverts.

Maintenance: 15 miles surface treatment, 13 miles dust laying (8 oil and 5 calcium), 10,000 tons crushed stone; 135 miles snow plowing.

Purchases: Spreader, truck light tractor, grader, automobile, and float.

Wentworth—Construction: 47 miles bituminous surfacing, 1 steel bridge, 3 concrete bridges, 7 pipe culverts.

Maintenance: 60 miles surface treatment, 184 miles snowplowing.

Purchases: 3 acres land, 2 trucks, 3 snow plows, 2 sand spreaders.

Townships—Construction: .5 miles concrete, 8.861 miles asphaltic concrete, 64.9 miles bituminous surfacing; 22 concrete bridges, 68 culverts (26 metal arch and 42 concrete), 356 pipe culverts.

Maintenance: 103.55 miles surface treatment, 383 miles oil, 428.29 miles calcium dust laying, 3,342.5 miles snow plowing; 45 bridges repaired.

Purchases: 7 pick-up and 13 dump trucks, 8 graders, 2 plows and wings, 4 loaders, 2 mowers, 1 sand spreader, 1 sprayer, 3 tractor mowers, 1 chain saw.

DISTRICT 5—(3 counties, 38 townships, 2 Indian reserves, 29 urban municipalities)

Bruce—Construction: 8.25 miles new grade using 51,265 c.y. pit run and 11,632 c.y. crushed gravel; 11.5 miles hot mix, 5 miles mulch; 300 l.f. underdrainage; 200 rods fencing, 2 concrete bridges, 3 metal arch and 64 pipe culverts, 17 culverts extended.

Maintenance: 14 miles bituminous treatment, 120 miles calcium dust laying; 4 miles ditching; 90 miles snow fence; 305 miles snow clearing; 100 miles weed spraying and cutting; 21,818 c.y. crushed gravel resurfacing, 6 bridges and 2 culverts repaired.

Purchases: 1 grader, 1 compactor; 24.75 acres.

Dufferin—Construction: 4.5 acres clearing and grubbing, 8 miles new grade using 500 c.y. pit run and 5,000 c.y. crushed gravel; 1 concrete bridge, 2 metal arch and 30 pipe culverts.

Maintenance: 30 miles calcium dust laying; 40 miles snow fence; 160 miles snow clearing; 160 miles weed spraying; 50,000 c.y. crushed gravel resurfacing; 2 bridges and 20 culverts repaired.

Purchases: 1 grader, 1 truck, 15 acres.

Grey—Construction: 5.5 miles new grade using 12,867 c.y. gravel; 1,960 rods fencing; 2 bridges and 96 pipe culverts.

Maintenance: 13.7 miles bituminous treatment, 39 miles oil and 170 miles calcium dust laying; 8 miles ditching; 70.5 miles snow fence, 368 miles snow clearing; 108 miles weed spraying, 146 miles brush and weed cutting; 49,760 c.y. crushed gravel resurfacing; 2 bridges and 31 culverts repaired.

Purchases: 1 automobile, 2.1 acres.

Townships—Construction: 36.6 acres clearing and grubbing; 169 miles reconstruction using 134,490 c.y. pit run, 104,870 c.y. crushed gravel and 2,180 c.y. crushed stone; 3.5 miles mulch; 10,260 l.f. guide rail; 9,900 rods fencing; 20 concrete and 4 timber bridges; 18 concrete, 25 metal arch and 861 pipe culverts.

Maintenance: 72 miles ditching; 4.3 miles bituminous treatment, 11 miles oil and 283 miles calcium dust laying; 3 miles clay stabilization; 244 miles snow fence; 2,536 miles weed spraying and cutting; 43,680 c.y. pit run and 285,980 c.y. crushed gravel resurfacing; 56 bridges and 276 culverts repaired.

Purchases: 4 graders, 2 snow plows, 4 snow wings, 1 truck, 1 mower, 1 machinery shed; 28.95 acres.

DISTRICT 6—(4 counties, 31 townships, 1 Indian reserve, 34 urban municipalities)

Halton—Construction: 3 concrete bridges, 45 pipe culverts, 700 l.f. guide rail, 30,000 c.y. granular base on 4.5 miles, 15,000 c.y. crushed gravel on 6 miles, 1.15 miles light bituminous surface, 10 miles asphaltic concrete pavement.

Maintenance: 5 miles roadside ditching, 10.5 miles surface treatment, 2.25 miles oil, 70 miles calcium dust layer, 29,000 c.y. crushed gravel, 10 culverts repaired.

Purchases: 1 truck, 1 sander, 2 snow plows; 1 acre.

Peel—Construction: 27 acres clearing and grubbing, 17.5 miles grading, 1 steel bridge, 6 concrete bridges, 180 pipe culverts, 2 metal arch culverts, 1 concrete culvert; 10,782 rods fencing, 155,740 c.y. crushed gravel on 17.3 miles, 1,187.67 tons crushed stone on 0.6 miles, 10.73 miles asphaltic concrete pavement.

Maintenance: 4.0 miles roadside ditching, 27.1 miles surface treatment, 33.3 miles oil and 38 miles calcium dust layer, 16,000 c.y. crushed gravel; 4 bridges repaired.

Purchases: 2 pick-up and 2 dump trucks, 3 snow plows, 1 sander; 3.6 acres.

Simcoe—Construction: 4 acres clearing and grubbing, 2.3 miles grading, 1 concrete bridge, 31 pipe culverts, 868 l.f. guide rail, 59,632 c.y. granular base and 57,831 c.y. crushed gravel on 13.5 miles new grades; 16 miles asphaltic concrete pavement.

Maintenance: 2.1 miles roadside ditching, 3.5 miles surface treatment, 67 miles prime, 132 miles calcium dust layer, 36,736 c.y. crushed gravel, 427.9 tons crushed stone; 2 bridges and 35 culverts repaired.

Purchases: 1 motor grader, 1 wobble wheel compactor, 1 tractor, 1 dump truck, 2 power saws; 16.8 acres.

York—Construction: 14 acres clearing and grubbing, 7 miles grading, 3 concrete bridges, 1 concrete culvert, 18 pipe culverts, 96,313 s.y. sodding, 21,315 l.f. guide rail, 900 ft. underdrainage, 13.5 miles stabilized base, 5,040 rods fencing, 80,653 c.y. granular base, 66,116 c.y. crushed gravel, 1.25 miles light bituminous surface, 24.5 miles asphaltic concrete pavement.

Maintenance: 35 miles roadside ditching, 32 miles bituminous surface treatment, 25 miles calcium dust layer, 179 c.y. pit run gravel, 7,811 tons crushed gravel; 25 culverts repaired.

Purchases: 3 trucks, 1 platform truck, 1 automobile, 1 front end loader, 6 tractors; 24.5 acres.

Townships—Construction: 35.5 acres clearing and grubbing, 121.5 miles grading, 508 pipe culverts, 1 timber culvert, 93 metal arch culverts, 13 concrete culverts, 6 timber bridges, 5 steel bridges, 54 concrete bridges, 50,369 s.y. sodding, 5,360 l.f. guide rail, 4,880 ft. underdrainage, 23.95 miles stabilized base, 3,064.5 rods fencing, 76,263 c.y. granular base, 110,329 c.y. crushed gravel, 64,055 tons crushed stone, 49 miles light bituminous surface, 18.8 miles asphaltic concrete pavement.

Maintenance: 233.8 miles roadside ditching, 11,820 ft. offtake ditching, 51 miles bituminous surface treatment, 247.8 miles prime, 599.7 miles calcium dust layer, 92,757 c.y. pit run gravel, 182,369 c.y. crushed gravel, 107,855 tons crushed gravel, 39,156.6 tons crushed stone, 50 bridges and 293 culverts repaired.

Purchases: 1 grader, 2 front end loaders, a crawler type loader, 1 bulldozer, 8 dump and 5 pick-up trucks, 3 tractors, 2 sanders, 4 snow plows, 1 snow wing, 2 loader attachments for tractors, 1 mower, 1 welder, 1 asphalt kettle; 14.4 acres and 36.5 acres gravel deposits.

DISTRICT 7—(3 county units, 37 township units, 17 urban municipalities)

Northumberland and Durham—Construction: 15 miles new grade, 12.5 miles mulch, 17 miles seal coat, 3 bridges; 4,000 l.f. guide rail.

Maintenance: 160 miles dust laying; 3 bridges and 4 culverts repaired, 3,000 c.y. pit run and 1,500 c.y. crushed gravel resurfacing; 5 miles of ditching.

Purchases: 1 grader, 1 truck, 1 tractor, 2 sanders; 30 acres.

Prince Edward—Construction: 8 miles new grade, 7.6 miles mulch; 87 pipe culverts.

Maintenance: 96 miles dust laying, 16 culverts repaired, 10,000 c.y. pit run and 9,000 c.y. crushed gravel, 1 mile ditching.

Purchases: 2 dump trucks.

Peterborough—Construction: 8 miles new grade, 12.5 miles mulch, 6 concrete bridges, 3,000 l.f. guide rail.

Maintenance: 66 miles dust laying, 1 mile surface treatment; 16 bridges repaired, 480 c.y. pit run and 2,989 c.y. crushed gravel resurfacing, 2 miles ditching.

Purchases: 1 grader, 1 truck, 1 concrete mixer, 1 distributor.

Townships—Construction: 11 concrete bridges, 33 metal arch culverts.

Maintenance: 311.6 miles dust laying, 28.1 miles surface treatment; 45 bridges repaired, 60.6 miles roadside ditching, 77,307 c.y. pit run and 106,864 c.y. crushed gravel.

Purchases: 3 trucks, 2 tractors, 1 chain saw, 1 spreadall; 5.65 acres.

DISTRICT 8—(4 county units, 43 township units, 18 urban municipalities)

Frontenac—Construction: 15 acres clearing and grubbing; 9 miles new grade using 25,566 c.y. crushed stone; 1.4 miles mulch; 1,860 rods fencing; 8,400 l.f. guide rail; 27 pipe culverts.

Maintenance: 12.3 miles bituminous treatment, 8 miles oil and 7 miles calcium dust laying; 165 miles snow clearing; 54 miles weed spraying and cutting; 3,000 c.y. crushed stone resurfacing; 2 bridges and 30 culverts repaired.

Purchases: 1 truck, 2 sanders, 1 asphalt kettle.

Hastings—Construction: 3 acres clearing and grubbing; 3 miles new grade; 5.6 miles double surface treatment; 1.25 miles stabilized base; 3,410 rods fencing; 400 l.f. guide rail; 1 concrete bridge, 2 metal arch and 23 pipe culverts.

Maintenance: 14 miles bituminous treatment, 22 miles snow fence, 31 miles oil and 99 miles calcium dust layer; 266 miles snow clearing; 256 miles weed spraying and cutting; 1,936 c.y. pit run, 8,468 c.y. crushed gravel and 6,515 tons crushed stone resurfacing; 11 bridges and 14 culverts repaired.

Purchases: 2 graders, 1 truck; 18.5 acres.

Leeds and Grenville—Construction: 12.7 acres clearing and grubbing; 6.4 miles new grade; 1.2 miles mulch, 6,397 rods fencing; 1 concrete and 12 pipe culverts.

Maintenance: 34.4 miles bituminous treatment, 108 miles calcium dust laying; 7 miles stabilized base; 28.8 miles snow fence, 347 miles snow clearing; 366 miles weed spraying and cutting; 1,690 c.y. pit-run, 8,444 c.y. crushed gravel and 5,382 c.y. crushed stone resurfacing; 5 bridges and 2 culverts repaired.

Purchases: 47.8 acres.

Lennox and Addington—Construction: 2 miles mulch, 10 miles new grade using 94,000 c.y. pit run, 8,000 c.y. crushed gravel and 6,000 c.y. crushed stone; 200 l.f. guide rail; 100 rods fencing; 1 concrete bridge and 50 pipe culverts.

Maintenance: 45 miles oil and 10 miles calcium dust laying; 180 miles snow clearing; 60 miles weed spraying and cutting; 3,000 c.y. crushed stone resurfacing.

Purchases: 1 truck, 1 sander, 1 post hole auger.

Townships—Construction: 46 miles new grade, 5.7 miles mulch; 1 mile mixed macadam; 5,450 rods fencing; 217 pipe culverts.

Maintenance: 22.3 miles bituminous treatment; 273 miles dust laying.

Purchases: 5 graders, 4 loaders, 1 crusher, 8 trucks.



The Old—Former Pond Ditch Bridge on Leeds & Grenville County Road No. 5, one mile north of Mallorytown. (Kingston)

DISTRICT 9—(4 county units, 47 township units, 23 urban municipalities)

Carleton—Construction: 21.9 miles asphaltic concrete, 1 mile double surface treatment, 28 miles new grade using 248,519 c.y. pit run and 49,467 c.y. crushed gravel, 2,362 l.f. guide rail; 6 concrete and 2 steel bridges, 95 metal culverts, 327 l.f. underdrainage; 21,345 rods fencing.

Maintenance: 10.5 miles bituminous treatment, 40 miles calcium dust laying, 174 miles weed spraying; 5,853 c.y. pit run and 11,582 c.y. crushed gravel; 3 bridges and 46 culverts repaired.

Purchases: 2 trucks, 1 trailer, 1 pump; 50.44 acres.

Lenark—Construction: 3.1 miles mulch, 4.5 miles new grade using 16,597 c.y. crushed gravel; 1,000 l.f. guide rail; 1 steel bridge; 1,900 rods fencing.

Maintenance: 9.2 miles bituminous treatment, 114.5 miles calcium dust laying, 9 miles roadside ditching, 150 miles weed spraying, 6,985 c.y. pit run, 425 c.y. crushed gravel and 1,225 c.y. crushed stone; 5 bridges and 37 culverts repaired.

Purchases: 1 grader, 1 truck; 8.12 acres.

Prescott and Russell—Construction: 12.95 miles mulch, 31 miles new grade using 72,116 c.y. pit run, 125,594 c.y. crushed gravel, and 10,500 c.y. crushed rock; 600 l.f. guide rail, 1 concrete, 1 steel and 1 wooden bridge; 98 pipe culverts and 12,845 rods fencing.

Maintenance: 10 miles calcium dust laying; 10 miles roadside ditching; 308 miles weed spraying; 31,500 c.y. crushed gravel, and 4,775 c.y. crushed stone; 3 bridges repaired.

Purchases: 1 car, 2 trucks, 1 grader; 6.5 acres.

Stormont, Dundas and Glengarry—Construction: 10 miles hot mix pavement, 6 miles new grade using 31,300 c.y. pit run and 19,200 c.y. crushed gravel; 1 concrete bridge, 6 concrete culverts.

Maintenance: 95 miles calcium dust laying; 185 miles weed spraying, 3,200 c.y. pit run and 2,600 c.y. crushed gravel.

Purchases: 1 car, 1 snow plow; 10.43 acres.

Townships—Construction: 23 miles hot mix paving, 0.5 miles mulch, 110 miles new grade using 134,937 c.y. pit run and 116,700 c.y. crushed gravel; 13 concrete, 6 steel and 5 wooden bridges; 61 concrete, 19 metal arch, 18 wooden and 460 pipe culverts.

Maintenance: 2.1 miles bituminous surface treatment, 14.5 miles oil and 684 miles calcium dust laying; 1,083 miles weed spraying, 715 miles weed cutting, 58 miles roadside ditching; 61,640 c.y. pit run, 233,575 c.y. crushed gravel, and 6,050 c.y. crushed stone; 104 bridges and 307 culverts repaired.

Purchases: 4 graders, 7 trucks, 2 bulldozers, 3 tractors, 2 saws, 1 weed sprayer; 17.3 acres.

DISTRICT 10—(1 county, 39 townships, 1 Indian reserve, 12 urban municipalities, 3 statute labour boards, 2 unorganized township units)

Renfrew—Construction: 31.7 miles asphaltic concrete, 17 miles new base; 3 reinforced concrete culverts, 1 metal arch and 73 metal culverts.

Maintenance: 6 miles bituminous and 80 miles calcium dust laying, 80 miles weed spraying, 150 miles weed cutting; 9,000 c.y. pit run gravel; 40 miles snow fence; 6 bridges and 21 culverts repaired.

Purchases: 1 snow plow wing and 1 trailer type weed sprayer.



New Pond Ditch Bridge on Leeds & Grenville County Road No. 5, one mile north of Mallorytown.
(Kingston)

District 10, cont'd.

Townships—Construction: 6.3 miles asphaltic concrete, 138 miles new grade using 54,049 c.y. pit run and 8,809 c.y. crushed gravel; 546 l.f. guide rail, 5 miles stabilized base, 14 timber and 1 steel bridge, 11 timber and 203 steel pipe culverts.

Maintenance: 1.5 miles bituminous and 109 miles calcium dust laying; 145 miles roadside ditching, 164 miles weed spraying, 188 miles weed and brush cutting, 66,145 c.y. pit run, and 43,000 c.y. crushed gravel; 88 bridges and 284 culverts repaired.

Purchases: 2 trucks, 1 snow plow, 1 bulldozer.

Unorganized Townships—Construction: 1 timber bridge, 17 pipe culverts.

Maintenance: 4½ miles ditching, 2,060 c.y. pit run gravelling, and 2 timber bridges repaired.

DISTRICT 11—(2 counties, 1 provisional county, 1 district, 49 townships, 1 improvement district, 2 Indian reserves, 4 statute labour boards, 19 urban municipalities and 4 unorganized units)

Ontario—Construction: 33 acres clearing and grubbing; 16 miles asphaltic concrete, 22.2 miles mulch; 10.2 miles new grade using 60,000 c.y. pit run and 10,000 c.y. crushed gravel; 4 concrete and 1 timber bridge; 1 concrete and 39 pipe culverts.

Maintenance: 12.3 miles bituminous treatment, 33 miles oil and 16.5 miles calcium dust laying; 35 miles snow fence, 252 miles snow clearing; 218 miles weed spraying; 10,500 c.y. pit run, 18,000 c.y. crushed gravel and 2,000 tons crushed stone resurfacing; 11 bridges and 66 culverts repaired.

Purchases: 1 truck, 1 plow, 1 weed sprayer, 1 pavement marker; 1 depot garage; 20.5 acres.

Victoria—Construction: 27 miles mulch; 1.9 miles new grade; 1 concrete bridge and 54 pipe culverts.

Maintenance: 11.35 miles bituminous treatment, 116 miles calcium dust laying; 48 miles snow fence; 224 miles snow clearing; 422 miles weed spraying and cutting; 2,850 c.y. pit run, 14,800 c.y. crushed gravel and 4,126 tons crushed stone resurfacing; 20 bridges and 30 culverts repaired.

Purchases: 1 sand spreader; 4.2 acres.

Townships—Construction: 40 acres clearing and grubbing; 45 miles reconstruction using 66,890 c.y. pit run, 56,780 c.y. crushed gravel and 19,150 c.y. crushed stone; 12 miles asphaltic concrete and 21 miles mulch; 720 l.f. guide rail; 5.5 miles base stabilization; 1 steel and 6 timber bridges, 25 timber, 15 metal arch and 320 pipe culverts.

Maintenance: 21 miles oil and 412 calcium dust laying; 690 miles weed spraying; 98,160 c.y. pit run, 137,785 c.y. crushed gravel and 8,800 c.y. crushed stone resurfacing; 72 bridges and 554 culverts repaired.

DISTRICT 12—(18 township units, 3 Indian reserves, 9 urban municipalities, 18 statute labour boards, 6 unorganized units)

Organized Townships—Construction: 12.5 miles mulch; 21.25 miles reconstruction involving 42,700 c.y. rock and 84,300 c.y. earth excavation, 16,700 c.y. pit run and 2,180 c.y. crushed gravel; 6 timber, 6 concrete and 145 pipe culverts.

Maintenance: 0.5 miles bituminous treatment, 10.5 miles oil and 31 miles calcium dust laying; 81.75 miles roadside ditching; 143 miles weed spraying and cutting; 44,872 c.y. pit run and 20,400 c.y. crushed gravel resurfacing; 49 bridges and 287 culverts repaired.

Purchases: 1 truck, 1 tractor-loader, 1 sander and 1 mower.

Statute Labour and Unorganized Units—Construction: 1.5 miles mulch, 19.5 miles new grade using 21,800 c.y. pit run and 1,200 c.y. crushed gravel; 1 timber bridge, 27 timber culverts and 299 pipe culverts.

Maintenance: 54 miles ditching, 52 miles brush cutting, 418 miles snow plowing; 54,100 c.y. pit run resurfacing; 40 bridges and 295 culverts repaired.

DISTRICT 13—(18 organized townships, 7 urban municipalities, 17 statute labour boards, 32 unorganized units)

Organized Townships—Construction: 14 miles new grade using 11,900 c.y. pit run and 880 c.y. crushed gravel; 7 timber bridges, 18 timber culverts, 2 metal arch and 176 pipe culverts.

Maintenance: 69,490 c.y. pit run and 10,675 c.y. crushed gravel resurfacing; 51 bridges and 181 culverts repaired; 60.5 miles roadside ditching.

Purchases: 3 dump trucks, 1 sander, 1 snow plow; 4 acres.

Statute Labour and Unorganized Units—Construction: 18 miles new grade using 28,732 c.y. pit-run gravel; 6 timber bridges, 2 timber and 78 pipe culverts.

Maintenance: 42 miles roadside ditching; 124 miles brush and weed cutting; 38,125 c.y. pit-run resurfacing; 42 bridges and 152 culverts repaired.

DISTRICT 14—(26 organized townships, 9 urban municipalities, 23 statute labour boards, 59 unorganized units)

Organized Townships—Construction: 4.8 miles mulch, 11 miles new grade using 4,300 c.y. pit-run and 1,600 c.y. crushed stone; 450 l.f. guide rail; 5 steel and 6 timber bridges, 2 concrete and 109 pipe culverts.

Maintenance: 54,000 c.y. pit-run, 5,500 c.y. crushed gravel and 400 c.y. crushed stone resurfacing; 172.5 miles snow fence, 837 miles snow clearing; 85 miles brush cutting, 225 miles weed spraying; 46 bridges and 235 culverts repaired.

Purchases: 1 grader, 1 crawler-loader, 1 sander, 3 trucks, 2 snow plows.

Statute Labour and Unorganized Units—Construction: 6 miles new grade using 1,400 c.y. pit-run and 2,000 c.y. crushed gravel; 1 steel and 1 timber bridge, 1 timber culvert.

Maintenance: 34 miles ditching, 43 miles snow plowing, 100 miles snow clearing; 60 miles brush cutting; 40,375 c.y. pit-run and 5,000 c.y. crushed gravel resurfacing; 67 bridges and 252 culverts repaired.

DISTRICT 16—(6 organized township units, 6 urban municipalities, 1 Indian reserve, 27 statute labour boards)

Organized Townships—Construction: 1.95 miles new road using 3,370 c.y. pit-run and 600 c.y. crushed gravel; 1 timber bridge and 16 pipe culverts.

Maintenance: 28 miles snow fence, 251 miles snow plowing; 12 miles brush and weed cutting, 3 miles weed spraying; 9,865 c.y. pit-run resurfacing; 15 bridges and 54 culverts repaired.

Statute Labour and Unorganized Units—Construction: 1.3 miles new grade using 10,000 c.y. pit-run; 7 timber bridges, 5 box and 47 pipe culverts.

Maintenance: 29 miles ditching; 95 miles brush and weed cutting; 23,500 c.y. pit-run resurfacing; 6.5 miles snow fence and 120 miles snow plowing.

DISTRICT 17—(25 organized townships, 10 urban municipalities, 7 Indian reserves, 1 improvement district, 16 statute labour boards and 34 unorganized units)

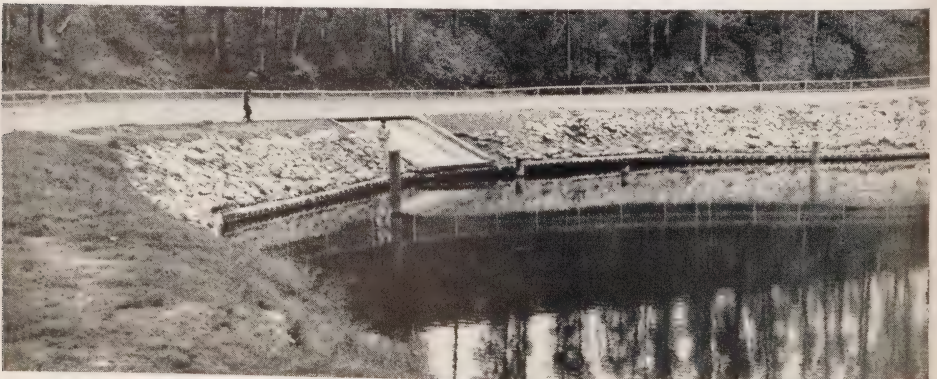
Organized Township Units—Construction: 14.25 acres cleared; 18.45 miles new grade using 56,835 c.y. pit-run, 19,670 c.y. crushed gravel and 4,700 c.y. crushed stone; 0.75 miles hot-mix and 4.5 miles mulch; 3,410 l.f. guide rail; 350 l.f. underdrainage; 7 bridges, 7 concrete and 161 pipe culverts.

Maintenance: 3.4 miles bituminous treatment, 2.75 miles oil and 109 miles calcium dust laying; 48.45 miles roadside ditching; 107 miles snow fence and 13,920 c.y. crushed gravel resurfacing; 730.5 miles snow clearing; 54,140 c.y. pit-run; 43 bridges and 137 culverts repaired.

Purchases: 1 truck, 1 back hoe and shovel, 1 steam heater, 1 bulldozer.

Statute Labour and Unorganized Units—Construction: 6 miles new grade using 6,917 c.y. pit gravel; 430 l.f. guide rail; 4 timber bridges and 138 pipe culverts.

Maintenance: 19.2 miles roadside ditching, 33.3 miles brush and weed cutting; 8.8 miles snow fence and 174.2 miles snow plowing; 36,146 c.y. pit-run and 1,000 c.y. crushed gravel resurfacing; 19 bridges and 57 culverts repaired.



Retaining Wall to contain a slide threatening roadway along Commando Lake. (Cochrane)

DISTRICT 18—(18 organized townships, 2 improvement districts, 8 urban municipalities, 9 Indian reserves, 18 statute labour boards, 56 unorganized units)

Organized Township Units—Construction: 8.75 miles new grade using 15,773 c.y. pit-run and 5,744 c.y. crushed gravel; 8 acres clearing; 4 timber bridges, 13 concrete pipe and 237 metal pipe culverts.

Maintenance: 104 miles roadside ditching; 15 miles oil and 44 miles calcium dust laying; 29 miles snow fence and 897 miles snow plowing; 49 miles weed spraying, 41.5 miles brush and weed cutting; 37,070 c.y. pit-run and 7,715 c.y. crushed gravel resurfacing; 49 bridges and 257 culverts repaired.

Purchases: 2 graders with plows, 1 tractor with back hoe, 1 truck, 2 loaders.

Statute Labour and Unorganized Units—Construction: 10 acres clearing, 1.75 miles new grade using 1,441 c.y. pit gravel; 2 timber bridges, 1 timber culvert and 79 pipe culverts.

Maintenance: 31.25 miles roadside ditching; 66 miles brush and weed cutting; 133 miles snow plowing; 44,030 c.y. pit gravel resurfacing; 19 bridges and 29 culverts repaired.

DISTRICT 19—(10 townships, 3 urban municipalities, 8 improvement districts, 21 statute labour boards, 7 unorganized units, 1 Indian reserve)

Organized Townships—Construction: 1.45 asphaltic concrete, 149 miles mulch, 18 miles new grade using 30,868 c.y. pit-run, 11.77 c.y. crushed gravel, 19,500 tons crushed stone; 6 timber bridges, 63 timber culverts, 86 metal culverts.

Maintenance: 3.75 miles bituminous treatment; 15.5 miles oil; 17.6 miles calcium dust laying; 69.5 miles weed spraying; 66.55 miles roadside ditching; 35,575.55 c.y. pit gravel resurfacing; 24 bridges, 125 culverts repaired.

Purchases: 3 road rollers, 1 sand spreader, 1 overhead loader; 2 trucks, 1 grader.

DISTRICT 20—(19 township units, 6 urban municipalities, 24 statute labour boards, 39 unorganized units)

Organized Townships—Construction: 3 miles new grade using 2,727 c.y. pit gravel; 41 timber and 21 pipe culverts.

Maintenance: 11.2 miles roadside ditching; 25.5 miles calcium dust laying; 78 miles snow fence and 615.5 miles snow plowing; 157.5 miles weed spraying, 219 miles brush and weed cutting; 40,654 c.y. pit-run and 714 c.y. crushed gravel resurfacing; 19 bridges and 132 culverts repaired.

Statute Labour and Unorganized Units—Construction: 1.5 acres clearing; 9.2 miles new grade using 6,614 c.y. pit gravel; 150 l.f. guide rail; 1 timber bridge, 6 timber and 36 pipe culverts.

Maintenance: 79.3 miles roadside ditching; 107.5 miles brush and weed cutting; 22 miles snow fence and 292.6 miles snow plowing; 59,653 c.y. gravel resurfacing; 9 bridges and 217 culverts repaired.

SIDEWALK CONSTRUCTION, 1957-58

(Under Part X, Section 94, The Highway Improvement Act, 1957)

East Hawkesbury Township, Police Village of Ste. Anne de Prescott (County Road No. 18).....	\$ 148.50
Loughborough Township, Village of Sydenham (County Road No. 5A).....	222.75
Pelham Township, Village of Fenwick (County Road No. 6).....	1,625.54
Woolwich Township, Police Village of Conestogo (Kitchener Sub. Road No. 13).....	430.08
Clarence Township, Village of Clarence Creek (County Roads No. 1 & 8).....	338.78
Ancaster Township, West-side Fiddlers Green Rd. Lots 42/43, Con. III.....	1,493.54
TOTAL	\$4,259.19

APPENDIX No. 1

**DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, DEVELOPMENT ROADS,
ROADS IN UNINCORPORATED TOWNSHIPS, ETC.
BY COUNTIES AND DISTRICTS**

April 1st, 1957, to March 31st, 1958

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway No. 2.....	\$ 322,567.95	\$ 56,365.40	\$ 378,933.35
" " 5.....	542,272.44	17,774.56	560,047.00
" " 24.....	22,486.79	58,207.17	80,693.96
" " 24A.....		10,884.34	10,884.34
" " 53.....	4,188.21	36,729.55	40,917.76
" " 54.....	7,825.47	79,752.87	87,578.34
" " 99.....	5,582.46	11,457.98	17,040.44
Miscellaneous Survey.....	1,566.53		1,566.53
Sidewalk:			
Brantford Township Highway 24.....	58.90		58.90
Connecting Link:			
City of Brantford.....	69,860.05		69,860.05
	\$ 976,408.80	\$ 271,171.87	\$1,247,580.67
Bruce:			
Highway No. 4.....	\$ 5,949.99	\$ 228,625.86	\$ 234,575.85
" " 6.....	13,161.53	243,413.19	256,574.72
" " 9.....	2,015.32	81,233.16	83,248.48
" " 21.....	251,353.36	122,769.98	374,123.34
" " 86.....	1,383.50	22,072.02	23,455.52
Connecting Links:			
Town of Hanover.....		103.92	103.92
Town of Kincardine.....		759.52	759.52
Village of Mildmay.....		727.19	727.19
Village of Teeswater.....		452.94	452.94
Town of Walkerton.....		768.96	768.96
Development Road:			
Elora Road.....	100,743.70		100,743.70
	\$ 374,607.40	\$ 700,926.74	\$1,075,534.14
Carleton:			
Highway No. 15.....	\$ 144,482.71	\$ 69,956.73	\$ 214,439.44
" " 16.....	118,162.43	45,439.50	163,601.93
" " 17.....	547,167.60	103,752.59	650,920.19
" " 17A.....	114,881.44		114,881.44
" " 17E.....	4,537.94		4,537.94
" " 29.....	995.15	11,762.74	12,757.89
" " 31.....	1,041,458.46	44,038.53	1,085,496.99
" " 44.....		22,169.88	22,169.88
Ottawa Queensway.....	515,301.74		515,301.74
Connecting Link:			
City of Ottawa.....	358,844.62		358,844.62
Development Roads:			
Nepean Swamp Road.....	10,500.00		10,500.00
Munster Sideroad.....		33,444.43	33,444.43
Range to March Village Road.....		3,910.85	3,910.85
River Road Township of North Gower.....		35,611.80	35,611.80
Fitzroy Harbour Road.....	27,344.06		27,344.06
Concession 3 & 4 Huntley Township.....	20,212.62		20,212.62
Fitzroy and Torbolton Boundary Road.....	9,429.11		9,429.11
	\$2,913,317.88	\$ 370,087.05	\$3,283,404.93

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Dufferin:			
Highway No. 9.....	\$ 9,099.70	\$ 50,013.98	\$ 59,113.68
" " 10.....	19,504.32	61,469.83	80,974.15
" " 24.....	184.48	26,385.54	26,570.02
" " 89.....	328,519.87	22,158.59	350,678.46
" " 104.....	712.97	4,153.14	4,866.11
Miscellaneous Surveys.....	313.37		313.37
Connecting Links:			
Town of Orangeville.....		98.43	98.43
Village of Shelburne.....		596.25	596.25
Development Roads:			
Dundalk Road.....	98,517.15		98,517.15
Shelburne-Mount Forest Road.....	36,992.51		36,992.51
Relessey Road Mono Township.....	20,588.20		20,588.20
	\$ 514,432.57	\$ 164,875.76	\$ 679,308.33
Elgin:			
Highway No. 3.....	\$ 839,613.63	\$ 119,289.14	\$ 958,902.77
" " 4.....	4,840.51	21,960.33	26,800.84
" " 19.....	1,510.46	22,300.17	23,810.63
" " 73.....	328.83	32,615.03	32,943.86
" " 74.....	4,095.97	94,683.76	98,779.73
" " 75.....	970.03	4,852.18	5,822.21
" " 76.....	1,236.98	6,222.39	7,459.37
" " 77.....	120.07	7,944.02	8,064.09
" " 123.....	5.75		5.75
" " 401.....	91,146.81		91,146.81
Connecting Links:			
Town of Aylmer.....	1,331.92		1,331.92
City of St. Thomas.....	42,706.45		42,706.45
Development Road:			
Calton-Griffin's Corners.....	10,800.66		10,800.66
	\$ 998,708.07	\$ 309,867.02	\$ 1,308,575.09
Essex:			
Highway No. 2.....	\$ 128,938.60	\$ 36,013.80	\$ 164,952.40
" " 3.....	4,809.98	52,930.60	57,740.58
" " 3B.....	3,346.90	6,923.17	10,270.07
" " 18.....	12,577.59	44,783.83	57,361.42
" " 18A.....	1,179.47	99,225.01	100,404.48
" " 39.....	136,278.79	17,676.71	153,955.50
" " 98.....	43,217.33	38,948.76	82,166.09
" " 107.....	974.03	1,136.99	2,111.02
" " 114.....	293.10	1,451.25	1,744.35
" " 401.....	2,086,356.15	58,614.58	2,144,970.73
Pelee Island.....	8,581.58	6,744.29	15,325.87
Connecting Links:			
Town of Amherstburg.....		7,704.21	7,704.21
Town of Essex.....		32,091.27	32,091.27
Town of Harrow.....		336.02	336.02
Town of Kingsville.....		206.56	206.56
Town of La Salle.....		79.12	79.12
Town of Leamington.....		118.29	118.29
Town of Ojibway.....		136.90	136.90
Town of Tecumseh.....		202.70	202.70
	\$2,426,553.52	\$ 405,324.06	\$2,831,877.58
Frontenac:			
Highway No. 2.....	\$ 8,378.34	\$ 48,238.97	\$ 56,617.31
" " 7.....	909,928.52	57,479.02	967,407.54
" " 15.....	113,059.33	64,025.60	177,084.93
" " 33.....	2,204.68	10,906.98	13,111.66
" " 38.....	124,859.50	128,135.19	252,994.69
" " 41.....	6,704.33	13,400.99	20,105.32

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Frontenac (Cont'd):			
Highway No. 95.....	\$ 9,355.86	\$ 24,280.07	\$ 33,635.93
" " 96.....	3,679.46	66,064.45	69,743.91
" " 401.....	2,252,698.59	24,519.86	2,277,218.45
Ferries.....	288.73		288.73
Secondary Road No. 506.....		55,718.65	55,718.65
" " 509.....		24,505.58	24,505.58
Sidewalk:			
Verona.....	2,218.96		2,218.96
Connecting Link:			
City of Kingston.....		1,036.90	1,036.90
Development Roads:			
Battersea Road.....	Cr. 183.40		Cr. 183.40
Perth Road.....	75,162.93		75,162.93
Maas Road.....	76,767.44		76,767.44
Gardiner Road.....	14,049.17		14,049.17
Burnt Hills Road.....	Cr. 1,186.00		Cr. 1,186.00
Desert Lake Road.....	11,187.60		11,187.60
Snow Road.....	24,744.02		24,744.02
Concession 3 and 4 Township of			
Pittsburgh Road.....	23,026.05		23,026.05
Otter Lake Road.....	17,530.34		17,530.34
Crow Lake Road.....	14,982.61		14,982.61
	\$3,689,457.06	\$ 518,312.26	\$4,207,769.32
Grey:			
Highway No. 4.....	\$ 5,756.73	\$ 89,685.74	\$ 95,442.47
" " 6.....	635,079.84	110,705.75	745,785.59
" " 10.....	24,126.25	64,115.19	88,241.44
" " 21.....	3,239.94	21,905.18	25,145.12
" " 24.....	16,381.38	7,920.79	24,302.17
" " 26.....	23,201.93	70,530.25	93,732.18
Connecting Links:			
Village of Chatsworth.....		193.11	193.11
Town of Durham.....		1,143.40	1,143.40
Village of Flesherton.....		541.46	541.46
Town of Hanover.....		485.82	485.82
Village of Markdale.....		390.16	390.16
Town of Meaford.....		2,143.89	2,143.89
Town of Thornbury.....		234.93	234.93
Development Roads:			
Big Bay-Payette Point Road.....	19,228.36		19,228.36
Shelburne-Mount Forest Road.....	13,357.18		13,357.18
Hanover southerly Road.....	211,911.45		211,911.45
	\$ 952,283.06	\$ 369,995.67	\$1,322,278.73
Haldimand:			
Highway No. 3.....	\$ 22,349.81	\$ 126,429.77	\$ 148,779.58
" " 6.....	607,986.00	70,081.34	678,067.34
" " 54.....	9,241.41	53,710.17	62,951.58
" " 56.....	1,175.64	18,220.86	19,396.50
Connecting Links:			
Village of Caledonia.....		1,009.59	1,009.59
Village of Cayuga.....		13,548.83	13,548.83
Town of Dunnville.....		400.95	400.95
Village of Hagersville.....		579.27	579.27
Village of Jarvis.....		1,539.54	1,539.54
Development Roads:			
Haldimand County Road No. 17.....	175,421.18		175,421.18
	\$ 816,174.04	\$ 285,520.32	\$1,101,694.36
Halton:			
Highway No. 2.....	\$ 87,778.21	\$ 51,268.96	\$ 139,047.17
" " 5.....	35,505.57	59,304.74	94,810.31

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Halton (Cont'd):			
Highway No. 7.....	\$ 3,076.74	\$ 39,891.04	\$ 42,967.78
" " 20.....		2,767.62	2,767.62
" " 25.....	105,159.36	61,579.84	166,739.20
" " 122.....	Cr.223,122.82	17,241.37	Cr.205,881.45
" " 401.....	536,762.87		536,762.87
Queen Elizabeth Way.....	4,050,909.92	175,290.72	4,226,200.64
Freeman-Wolfe Island.....	1,002,599.57		1,002,599.57
Miscellaneous Survey.....	2,415.04		2,415.04
Connecting Links:			
Town of Acton.....		323.83	323.83
Town of Burlington.....		152.05	152.05
Town of Georgetown.....		473.82	473.82
Town of Milton.....		595.53	595.53
	\$5,601,084.46	\$ 408,889.52	\$6,009,973.98
Hastings:			
Highway No. 2.....	\$ 44,687.51	\$ 66,025.45	\$ 110,712.96
" " 7.....	16,562.13	58,529.03	75,091.16
" " 14.....	8,003.53	72,948.77	80,952.30
" " 28.....	1,467.59	16,971.44	18,439.03
" " 33.....	5,445.74	25,506.96	30,952.70
" " 37.....	19,816.29	73,781.84	93,598.13
" " 62.....	34,302.28	187,438.81	221,741.09
" " 127.....	216,531.03	27,228.47	243,759.50
" " 401.....	2,833,857.16		2,833,857.16
Secondary Road No. 500.....	1,467.34	66,325.18	67,792.52
" " " 502.....	164.83	28,160.84	28,325.67
" " " 517.....		13,292.23	13,292.23
" " " 620.....		29,625.20	29,625.20
Bicroft Mine Road.....	88,589.47	5,447.51	94,036.98
Miscellaneous Survey.....	627.25		627.25
Connecting Links:			
Town of Deseronto.....		2,263.47	2,263.47
Village of Madoc.....		1,919.03	1,919.03
Village of Marmora.....		803.83	803.83
Development Roads:			
Frankfort-Foxborough Road.....	3,008.53		3,008.53
Bessemer-Hermon Road.....	6,198.55		6,198.55
Lower Paraday Road.....	6,292.98		6,292.98
Madoc-Moira Lake Road.....	296,269.77		296,269.77
Hermon-McArthur Mills Road.....	2,262.94		2,262.94
St. Ola Road.....	3,880.24		3,880.24
Ryan Road.....	3,113.85		3,113.85
Cordova-Vansickle Road.....		2,381.49	2,381.49
Concession 9 and 10 Township of Hungerford.....	17,631.73		17,631.73
Halloway By-pass.....	34,411.83		34,411.83
Ridge Road in Rawdon.....	14,949.46		14,949.46
Bird's Creek-Baptiste Road.....	9,980.47		9,980.47
9th Concession Hill, Township of Huntingdon.....	8,400.00		8,400.00
	\$3,677,922.50	\$ 678,649.55	\$4,356,572.05
Huron:			
Highway No. 4.....	\$ 19,304.46	\$ 217,969.57	\$ 237,274.03
" " 8.....	9,096.65	54,627.89	63,724.54
" " 9.....	7.96	2,539.34	2,547.30
" " 21.....	342,856.59	136,509.58	479,366.17
" " 23.....	205.19	8,214.26	8,419.45
" " 81.....	15.72	7,167.63	7,183.35
" " 83.....	15,197.75	53,152.67	68,350.42
" " 84.....	535,934.50	34,228.38	570,162.88
" " 86.....	365,451.62	78,673.90	444,125.52
" " 87.....	312.93	33,255.55	33,568.48

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Huron (Cont'd):			
Connecting Links:			
Town of Clinton.....	\$	\$ 394.42	\$ 394.42
Village of Exeter.....	.....	101.24	101.24
Town of Goderich.....	.....	12.65	12.65
Town of Seaforth.....	.....	1,276.77	1,276.77
Town of Wingham.....	.....	19,182.01	19,182.01
	\$1,288,383.37	\$ 647,305.86	\$1,935,689.23
Kent:			
Highway No. 2.....	\$ 139,590.35	\$ 129,465.96	\$ 269,056.31
" " 3.....	26,751.01	57,747.82	84,498.83
" " 21.....	2,013.14	27,602.71	29,615.85
" " 40.....	3,163.86	24,419.08	27,582.94
" " 78.....	300.00	11,572.46	11,872.46
" " 79.....	128.57	5,454.27	5,582.84
" " 98.....	61,951.77	66,436.56	128,388.33
" " 401.....	49,136.01	.....	49,136.01
Connecting Links:			
Town of Blenheim.....	.....	140.71	140.71
Town of Bothwell.....	.....	248.59	248.59
Town of Dresden.....	.....	128.47	128.47
Town of Ridgetown.....	.....	202.18	202.18
Village of Thamesville.....	.....	189.35	189.35
Town of Tilbury.....	.....	141.18	141.18
Town of Wallaceburg.....	.....	13.33	13.33
Village of Wheatley.....	.....	46.58	46.58
Development Road:			
Highgate to Highway No. 3.....	14,489.80	.....	14,489.80
	\$ 297,524.51	\$ 323,809.25	\$ 621,333.76
Lambton:			
Highway No. 7.....	\$1,636,565.42	\$ 46,090.62	\$1,682,656.04
" " 21.....	441,990.74	56,902.96	498,893.70
" " 22.....	9,452.43	4,492.88	13,945.31
" " 40.....	17,491.81	30,319.83	47,811.64
" " 79.....	120,847.28	39,611.45	160,458.73
" " 80.....	.....	6,896.69	6,896.69
" " 82.....	4,880.78	8,094.74	12,975.52
" " 402.....	200,227.81	10,267.57	210,495.38
Miscellaneous Survey.....	6.16	.....	6.16
Connecting Links:			
Town of Forest.....	.....	73,929.20	73,929.20
Village of Thedford.....	.....	520.94	520.94
Village of Wyoming.....	.....	48.22	48.22
Development Road:			
Courtright-Alvinston.....	11,332.44	.....	11,332.44
	\$2,442,794.87	\$ 277,175.10	\$2,719,969.97
Lanark:			
Highway No. 7.....	\$ 193,173.89	\$ 34,722.42	\$ 227,896.31
" " 15.....	372,212.44	82,553.74	454,766.18
" " 29.....	43,963.76	108,572.26	152,536.02
" " 44.....	.....	8,411.03	8,411.03
" " 110.....	40.00	3,596.49	3,636.49
Secondary Road No. 511.....	.....	33,491.72	33,491.72
Connecting Link:			
Town of Almonte.....	8,006.98	330.03	8,337.01
Development Roads:			
French Line Road.....	.....	11,304.84	11,304.84
Maberley-Bolingbroke Road.....	72,000.00	.....	72,000.00
Scotch Corners Road.....	7,019.22	.....	7,019.22
Burritts Rapids-Merrickville.....	7,573.12	.....	7,573.12
Lanark Village to Elphin.....	124,998.60	.....	124,998.60

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lanark (Cont'd):			
Merrickville Westerly.....	\$ 42,026.89	\$	\$ 42,026.89
Caldwell's Mills Easterly.....	12,387.58	.....	12,387.58
Concession No. 1 Township of Dalhousie.....	21,513.09	.....	21,513.09
	\$ 904,915.57	\$ 282,982.53	\$1,187,898.10
Leeds and Grenville:			
Highway No. 2.....	\$ 21,599.00	\$ 143,997.06	\$ 165,596.06
" " 15.....	36,365.73	80,436.72	116,802.45
" " 16.....	1,062.45	545,635.42	546,697.87
" " 29.....	711,548.47	59,188.91	770,737.38
" " 32.....	6,933.04	24,540.57	31,473.61
" " 42.....	12,452.01	67,228.53	79,680.54
" " 401.....	3,025,430.03	138,915.37	3,164,345.40
Hill Island.....		3,231.82	3,231.82
Miscellaneous Surveys.....	996.70	.....	996.70
Connecting Links:			
Town of Gananoque.....	47,202.55	.....	47,202.55
Village of Kemptville.....		168.49	168.49
Development Roads:			
Kemptville-Merrickville.....	39,792.24	.....	39,792.24
Rideau River Road.....	68,188.21	.....	68,188.21
Lyn-Row's Corners.....	18,204.26	.....	18,204.26
Houghton Bay Road.....	12,581.69	.....	12,581.69
Acton Corners-Oxford Mills.....	18,427.92	.....	18,427.92
Escott-Escott Centre.....	9,894.02	.....	9,894.02
Highway No. 2-Caintown.....	35,789.32	.....	35,789.32
Westport-Bedford Mills.....	30,100.00	.....	30,100.00
Kemptville, easterly.....	40,243.98	.....	40,243.98
Lyndhurst Road from Hwy. 15 to Lansdowne.....	17,819.11	.....	17,819.11
Bay Road.....	7,129.62	.....	7,129.62
	\$4,161,760.35	\$1,063,342.89	\$5,225,103.24
Lennox and Addington:			
Highway No. 2.....	\$ 2,614.00	\$ 50,545.62	\$ 53,159.62
" " 7.....	2,424.50	22,988.42	25,412.92
" " 33.....	211,210.71	56,615.67	267,826.38
" " 41.....	272,449.39	180,122.23	452,571.62
" " 401.....	99,362.48	.....	99,362.48
Ferries.....	32,407.57	53,484.78	85,892.35
Secondary Road No. 502.....	3,837.51	26,706.48	30,543.99
Miscellaneous Surveys.....	220.68	.....	220.68
Development Roads:			
Milhaven Road.....	2,994.35	.....	2,994.35
Croyden-Reidville.....	20,007.68	.....	20,007.68
Tamworth-Centreville.....	41,412.84	.....	41,412.84
Mooney's Crossing Diversion.....	12,069.48	.....	12,069.48
Denbigh-Raglan Road.....	.....	45,325.29	45,325.29
Beechwood Road.....	17,999.35	.....	17,999.35
	\$ 719,010.54	\$ 435,788.49	\$1,154,799.03
Lincoln:			
Highway No. 8.....	\$ 12,716.44	\$ 75,154.44	\$ 87,870.88
" " 8A.....	.....	7,960.71	7,960.71
" " 20.....	1,710.52	66,811.01	68,521.53
" " 57.....	.....	7,398.62	7,398.62
" " 58.....	1,314.82	11,075.84	12,390.66
Queen Elizabeth Way.....	386,885.25	171,909.56	558,794.81
Miscellaneous Surveys.....	3,076.94	.....	3,076.94

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lincoln (Cont'd):			
Connecting Links:			
Village of Beamsville.....	\$	\$ 141.43	\$ 141.43
Town of Grimsby.....	.....	129.50	129.50
	\$ 405,703.97	\$ 340,581.11	\$ 746,285.08
Middlesex:			
Highway No. 2.....	\$ 380,844.05	\$ 144,092.69	\$ 524,936.74
" " 4.....	56,216.07	70,368.53	126,584.60
" " 7.....	17,140.70	57,441.54	74,582.24
" " 22.....	393,514.79	57,070.56	450,585.35
" " 23.....	277.97	13,783.14	14,061.11
" " 73.....	.....	10,445.22	10,445.22
" " 74.....	13,792.22	10,589.25	24,381.47
" " 80.....	1,397.46	37,295.04	38,692.50
" " 81.....	198,325.64	93,056.54	291,382.18
" " 135.....	6,348.90	6,486.05	12,834.95
" " 401.....	929,173.41	114,677.98	1,043,851.39
Miscellaneous Surveys.....	2,984.68	.....	2,984.68
	\$2,000,015.89	\$ 615,306.54	\$2,615,322.43
Norfolk:			
Highway No. 3.....	\$ 74,829.58	\$ 65,377.42	\$ 140,207.00
" " 6.....	5,659.54	31,901.14	37,560.68
" " 19.....	1,085.65	15,749.21	16,834.86
" " 24.....	6,209.49	44,032.48	50,241.97
" " 59.....	814.26	3,982.23	4,796.49
Connecting Link:			
Town of Simcoe.....	.....	303.97	303.97
Development Roads:			
Long Point Park Approach.....	37,852.46	.....	37,852.46
Concession No. 5 Township of Woodhouse.....	9,204.32	.....	9,204.32
Courtland-Port Rowan.....	8,817.84	.....	8,817.84
	\$ 144,473.14	\$ 161,346.45	\$ 305,819.59
Northumberland and Durham:			
Highway No. 2.....	\$ 275,826.12	\$ 188,106.38	\$ 463,932.50
" " 7A.....	12,319.35	71,443.72	83,763.07
" " 28.....	68,028.91	33,217.90	101,246.81
" " 30.....	14,957.29	40,771.27	55,728.56
" " 33.....	2,485.42	9,993.75	12,479.17
" " 35.....	901,891.38	51,677.26	953,568.64
" " 45.....	264,123.28	50,259.27	314,382.55
" " 106.....	161.46	6,955.48	7,116.94
" " 115.....	73,123.74	19,766.43	92,890.17
" " 133.....	40,394.10	6,853.00	47,247.10
" " 401.....	1,792,127.42	49,146.26	1,841,273.68
Miscellaneous Surveys.....	3,613.97	.....	3,613.97
Connecting Links:			
Town of Campbellford.....	.....	206.26	206.26
Town of Bowmanville.....	.....	4,703.56	4,703.56
Town of Port Hope.....	.....	3,125.70	3,125.70
Development Roads:			
Hastings-Campbellford.....	77,729.62	.....	77,729.62
Burnley-Warkworth.....	9,867.05	.....	9,867.05
Highway No. 45 Gracien's Corners.....	9,336.00	.....	9,336.00
Enfield, southerly.....	26,610.78	.....	26,610.78
Swamp Road Diversion.....	32,484.11	.....	32,484.11
Boundary Road Townships of East Whitby and Darlington.....	.....	2,723.42	2,723.42
	\$3,605,080.00	\$ 538,949.66	\$4,144,029.66

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Ontario:			
Highway No. 2	\$ 33,578.45	\$ 51,594.36	\$ 85,172.81
" " 7	3,399.69	51,337.88	54,737.57
" " 7A	1,367.04	6,806.80	8,173.84
" " 12	114,608.38	310,696.57	425,304.95
" " 47	8,979.15	53,179.99	62,159.14
" " 48	318.41	19,282.11	19,600.52
" " 69	237,471.37	55,669.58	293,140.95
" " 401	219,885.88	249,894.58	469,780.46
Secondary Road No. 503	3,112.60	.....	3,112.60
Sidewalk:			
North Side of Petticoat Creek	436.00	.....	436.00
Connecting Links:			
Village of Beaverton .....	.....	79.52	79.52
Village of Port Perry .....	.....	1,656.60	1,656.60
Town of Uxbridge .....	.....	1,162.90	1,162.90
Town of Whitby .....	.....	6,147.79	6,147.79
Development Roads:			
Highway 69-Longford Mills	104,871.77	.....	104,871.77
Cooper's Falls Road	5,331.32	.....	5,331.32
Boundary Road Townships of East Whitby and Darlington .....	.....	2,723.43	2,723.43
	\$ 733,360.06	\$ 810,232.11	\$1,543,592.17
Oxford:			
Highway No. 2	\$ 397,825.67	\$ 70,029.89	\$ 467,855.56
" " 3	47,948.89	6,665.33	54,614.22
" " 19	412,725.05	62,415.02	475,140.07
" " 53	32,329.16	11,010.82	43,339.98
" " 59	12,543.29	60,354.90	72,898.19
" " 97	62,258.66	68,081.40	130,340.06
" " 100	10,174.82	75,796.76	85,971.58
" " 401	1,050,161.61	66,598.75	1,116,760.36
Miscellaneous Surveys	222.70	.....	222.70
Connecting Links:			
Village of Tavistock .....	.....	2,364.37	2,364.37
	\$2,026,189.85	\$ 423,317.24	\$2,449,507.09
Peel:			
Highway No. 2	\$ 861,016.52	\$ 47,455.32	\$ 908,471.84
" " 5	570,746.08	45,574.52	616,320.60
" " 7	18,230.73	45,027.36	63,258.09
" " 9	295.60	31,772.49	32,068.09
" " 10	435,965.50	120,308.01	556,273.51
" " 24	45,500.49	43,799.73	89,300.22
" " 50	45,165.17	103,249.89	148,415.06
" " 51	75,029.68	10,421.27	85,450.95
" " 122	9,136.35	8,452.61	17,588.96
" " 401	3,120,387.35	.....	3,120,387.35
Queen Elizabeth Way	1,702,808.47	100,086.48	1,802,894.95
Miscellaneous Surveys	3,260.22	.....	3,260.22
Connecting Links:			
Town of Brampton .....	.....	25,565.64	25,565.64
Village of Port Credit .....	.....	1,592.48	1,592.48
Development Road:			
Third Line East Township of Caledon	5,744.79	.....	5,744.79
	\$6,893,286.95	\$ 583,305.80	\$7,476,592.75
Perth			
Highway No. 7	\$ 28,767.07	\$ 63,591.88	\$ 92,358.95
" " 8	804,875.64	39,105.75	843,981.39
" " 19	41,333.14	69,223.33	110,556.47
" " 23	19,726.88	105,987.27	125,714.15

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Perth (Cont'd):			
Highway No. 83	\$ 3,429.19	\$ 5,755.70	\$ 9,184.89
" " 86	18,208.22	31,812.59	50,020.81
" " 100	211.26	6,984.80	7,196.06
Sidewalks:			
Sebringville	339.30	.....	339.30
Shakespeare	248.00	.....	248.00
Connecting Links:			
Town of Listowel .....	.....	57.75	57.75
Town of Mitchell	5,217.80	2,593.12	7,810.92
Town of Palmerston .....	.....	1,162.43	1,162.43
	\$ 922,356.50	\$ 326,274.62	\$1,248,631.12
Peterborough:			
Highway No. 7	\$ 266,985.34	\$ 57,565.97	\$ 324,551.31
" " 7A	1,280.70	1,571.18	2,851.88
" " 28	84,964.89	75,343.39	160,308.28
" " 30	9,485.40	3,813.83	13,299.23
" " 36	6,739.08	57,434.48	64,173.56
" " 45	3,664.29	13,644.86	17,309.15
" " 115	50,303.41	.....	50,303.41
" " 121 .....	.....	5,260.51	5,260.51
" " 133	54,743.96	14,762.19	69,506.15
Secondary Road No. 500	15,483.68	11,242.82	26,726.50
" " 504	10,387.96	80,040.41	90,428.37
" " 507 .....	.....	44,421.57	44,421.57
Miscellaneous Surveys	351.49	.....	351.49
Connecting Links:			
Village of Lakefield .....	.....	32.73	32.73
Development Roads:			
Church Line Road	8,750.27	.....	8,750.27
Limestone Ridge-Twin Lakes	27,176.20	.....	27,176.20
Cordova-Vansickle .....	.....	2,381.49	2,381.49
Hiawatha Road	2,740.84	.....	2,740.84
Lakefield-Nephton	197,984.08	.....	197,984.08
Anstruther Lake Road	22,891.06	.....	22,891.06
	\$ 763,932.65	\$ 367,515.43	\$1,131,448.08
Prescott and Russell:			
Highway No. 17	\$ 129,808.02	\$ 199,475.10	\$ 329,283.12
" " 34	2,777.53	18,776.78	21,554.31
Connecting Link:			
Village of L'Orignal .....	.....	4,658.70	4,658.70
Development Roads:			
Russel-Embrun Casselman	139,797.26	.....	139,797.26
St. Eugene, easterly	34,601.49	.....	34,601.49
Fournier-Routhier	30,754.44	.....	30,754.44
Vankleek Hill, westerly	39,210.88	.....	39,210.88
Rose Corners-St. Isadore	59,967.62	.....	59,967.62
	\$ 436,917.24	\$ 222,910.58	\$ 659,827.82
Prince Edward:			
Highway No. 14	\$ 27,404.75	\$ 28,255.09	\$ 55,659.84
" " 33	28,274.06	70,997.04	99,271.10
" " 41	17,062.61	28,984.54	46,047.15
Ferries	10,699.91	53,484.78	64,184.69
Miscellaneous Surveys	34.59	.....	34.59
Development Roads:			
Carrying Place-Rednersville	67,058.86	.....	67,058.86
Picton to Black River Road	15,000.00	.....	15,000.00
	\$ 165,534.78	\$ 181,721.45	\$ 347,256.23

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Renfrew:			
Highway No. 17.....	\$ 520,799.30	\$ 294,920.98	\$ 815,720.28
“ “ 29.....	154.44	5,011.69	5,166.13
“ “ 41.....	82,720.69	117,544.23	200,264.92
“ “ 60.....	550,784.43	67,697.27	618,481.70
“ “ 62.....	58,257.25	53,326.23	111,583.48
“ “ 132.....	11,491.85	32,067.97	43,559.82
Secondary Road No. 508.....	.....	50,828.84	50,828.84
“ “ “ 511.....	.....	17,199.54	17,199.54
“ “ “ 512.....	.....	18,722.05	18,722.05
“ “ “ 513.....	.....	20,421.23	20,421.23
“ “ “ 515.....	.....	37,735.79	37,735.79
“ “ “ 517.....	371.42	9,002.25	9,373.67
“ “ “ 521.....	.....	59,032.79	59,032.79
Pembroke-Allumette Island.....	80,006.79	.....	80,006.79
Miscellaneous Surveys.....	191.65	.....	191.65
Connecting Links:	.....	.....	.....
Town of Arnprior.....	.....	28.50	28.50
Town of Renfrew.....	.....	669.59	669.59
Development Roads:	.....	.....	.....
Hardwood Lake Road.....	34,158.59	.....	34,158.59
Quadville-Foymount.....	10,998.52	.....	10,998.52
Dacre-Mount St. Patrick.....	1,810.25	.....	1,810.25
Pilgrim Bridge.....	5,949.92	.....	5,949.92
Matawatchan-Wilson.....	15,000.00	.....	15,000.00
Kelly's Corner-Cobden.....	272,442.60	.....	272,442.60
Lake Dore-Golden Lake.....	31,330.95	.....	31,330.95
Kennelley's Corners-Douglas.....	11,084.79	.....	11,084.79
Petawawa-Carson Lake.....	Cr. 262.75	.....	Cr. 262.75
River Road Township of Horton.....	45,682.70	.....	45,682.70
Combermere-Hopefield.....	.....	23,514.41	23,514.41
Rocheftort-Castile.....	8,000.00	.....	8,000.00
Burnstown Road.....	94,643.90	.....	94,643.90
Rankin-Woito.....	24,999.35	.....	24,999.35
Black Donald Road.....	2,309.80	.....	2,309.80
	\$1,862,926.44	\$ 807,723.36	\$2,670,649.80
Simcoe:			
Highway No. 9.....	\$ 2,181.35	\$ 42,081.16	\$ 44,262.51
“ “ 11.....	867,795.01	348,690.32	1,216,485.33
“ “ 12.....	536,863.58	100,042.60	636,906.18
“ “ 24.....	16,538.78	36,929.54	53,468.32
“ “ 26.....	401,949.58	101,138.75	503,088.33
“ “ 27.....	125,182.62	217,132.67	342,315.29
“ “ 69.....	22.49	.....	22.49
“ “ 88.....	21,305.61	21,574.01	42,879.62
“ “ 89.....	23,512.17	41,333.38	64,845.55
“ “ 90.....	12,855.49	43,315.89	56,171.38
“ “ 91.....	.....	27,621.19	27,621.19
“ “ 92.....	46,593.97	23,422.54	70,016.51
“ “ 93.....	7,131.59	79,959.34	87,090.93
“ “ 103.....	736,524.66	35,178.27	771,702.93
“ “ 400.....	344,121.59	258,043.72	602,165.31
Secondary Road No. 501.....	.....	17,425.64	17,425.64
Miscellaneous Surveys.....	309.96	.....	309.96
Connecting Links:	.....	.....	.....
Town of Alliston.....	.....	640.70	640.70
Town of Barrie.....	.....	3.29	3.29
Village of Coldwater.....	.....	1,009.99	1,009.99
Town of Collingwood.....	.....	999.63	999.63
Town of Orillia.....	.....	8,452.57	8,452.57
Town of Penetang.....	.....	2,980.90	2,980.90
Village of Port McNicoll.....	.....	724.85	724.85
Town of Stayner.....	.....	314.33	314.33
Village of Victoria Harbour.....	.....	2,174.56	2,174.56

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
Development Roads:			
Oro-Medonte Township Line.....	\$ 23,053.07	\$	\$ 23,053.07
Minesing-Highway No. 90.....	134,038.35	.....	134,038.35
Adjala-Tecumseth-Township Line.....	21,029.53	.....	21,029.53
Fennall-Gilford.....	5,637.78	.....	5,637.78
Everett-Highway No. 89.....	Cr. 56.21	.....	Cr. 56.21
Tiny Township Road.....	28,637.74	.....	28,637.74
Cookstown-Highway No. 400.....	73,371.71	.....	73,371.71
Essa Township Sideroad No. 15.....	5,995.17	.....	5,995.17
Angus-Creemore.....	231,103.36	.....	231,103.36
Glen Huron-Dunedin.....	11,304.07	.....	11,304.07
Dalton Road Orillia Township.....	27,235.10	.....	27,235.10
	\$3,704,238.12	\$1,411,189.84	\$5,115,427.96
Stormont, Dundas and Glengarry:			
Highway No. 2.....	\$2,514,062.87	\$ 143,613.49	\$2,657,676.36
" " 31.....	135,844.28	40,412.26	176,256.54
" " 34.....	3,477.94	56,169.47	59,647.41
" " 43.....	233,833.20	73,284.50	307,117.70
" " 401.....	1,188,059.45	25,109.89	1,213,169.34
Connecting Links:			
Town of Alexandria.....	.....	50.21	50.21
Village of Winchester.....	.....	4,658.13	4,658.13
Development Roads:			
Maxville to County Road No. 21.....	34,309.45	.....	34,309.45
County Road No. 16.....	20,636.08	.....	20,636.08
Winchester-Melvin.....	15,367.43	.....	15,367.43
Crysler to Highway 31.....	79,254.31	.....	79,254.31
	\$4,224,845.01	\$ 343,297.95	\$4,568,142.96
Victoria:			
Highway No. 7.....	\$1,066,307.73	\$ 50,926.99	\$1,117,234.72
" " 35.....	660,767.03	232,089.32	892,856.35
" " 35A.....	.....	3,453.16	3,453.16
" " 36.....	171,155.42	54,093.97	225,249.39
" " 46.....	139,556.17	72,137.30	211,693.47
" " 121.....	70,984.25	38,168.12	109,152.37
" " 133.....	2,792.10	7,380.13	10,172.23
Secondary Road No. 500.....	34,359.74	11,523.97	45,883.71
" " " 503.....	119,355.69	126,469.84	245,825.53
" " " 505.....	.....	17,829.19	17,829.19
Miscellaneous Surveys.....	9.05	.....	9.05
Connecting Link:			
Town of Lindsay.....	.....	6,180.13	6,180.13
Development Road:			
Argyle-Glenarm.....	44,247.41	.....	44,247.41
	\$2,309,534.59	\$ 620,252.12	\$2,929,786.71
Waterloo:			
Highway No. 7.....	\$ 697,983.78	\$ 43,150.00	\$ 741,133.78
" " 8.....	31,345.82	134,810.06	166,155.88
" " 24.....	4,197.17	19,825.39	24,022.56
" " 24A.....	.....	11,047.86	11,047.86
" " 85.....	14,462.42	18,521.03	32,983.45
" " 86.....	305,104.36	61,410.92	366,515.28
" " 97.....	21,235.12	35,681.79	56,916.91
" " 401.....	29,827.62	.....	29,827.62
Miscellaneous Surveys.....	25.67	.....	25.67
Connecting Links:			
Town of Elmira.....	.....	244.08	244.08
Town of Hespeler.....	.....	903.47	903.47
Village of New Hamburg.....	.....	459.76	459.76

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Waterloo (Cont'd):			
Town of Preston.....	\$	\$ 7,287.66	\$ 7,287.66
	\$1,104,181.96	\$ 333,342.02	\$1,437,523.98
Welland:			
Highway No. 3.....	\$ 50,023.11	\$ 106,170.89	\$ 156,194.00
" " 3A.....	1,187.22	34,789.61	35,976.83
" " 3C.....	304.72	28,727.24	29,031.96
" " 8.....	6,043.23	8,509.32	14,552.55
" " 20.....	201,334.62	42,739.21	244,073.83
" " 57.....	524.42	21,487.14	22,011.56
" " 58.....	3,983.05	48,734.89	52,717.94
Queen Elizabeth Way.....	289,534.07	193,846.45	483,380.52
Miscellaneous Surveys.....	4,848.15	.....	4,848.15
Sidewalk:			
Wainfleet Township Highway 3.....	1,163.14	.....	1,163.14
Connecting Link:			
Town of Port Colborne.....	.....	264.45	264.45
	\$ 558,945.73	\$ 485,269.20	\$1,044,214.93
Wellington:			
Highway No. 6.....	\$ 692,184.13	\$ 128,364.23	\$ 820,548.36
" " 7.....	262,962.79	31,103.00	294,065.79
" " 9.....	329,666.65	75,214.56	404,881.21
" " 23.....	236.99	8,549.37	8,786.36
" " 24.....	48,744.58	60,516.52	109,261.10
" " 86.....	64,235.16	41,032.39	105,267.55
" " 87.....	50,582.57	11,930.27	62,512.84
" " 401.....	68,376.09	.....	68,376.09
Connecting Links:			
Village of Arthur.....	.....	944.84	944.84
Village of Clifford.....	.....	714.69	714.69
Town of Fergus.....	.....	388.11	388.11
Town of Harriston.....	.....	936.62	936.62
Town of Mount Forest.....	.....	1,047.95	1,047.95
Development Roads:			
Shelburne-Mount Forest.....	10,387.70	.....	10,387.70
Minto Township Sideroads			
Nos. 20 and 21.....	19,879.29	.....	19,879.29
County Road No. 84.....	52,951.39	.....	52,951.39
	\$1,600,207.34	\$ 360,742.55	\$1,960,949.89
Wentworth:			
Highway No. 2.....	\$ 138,220.30	\$ 67,648.45	\$ 205,868.75
" " 5.....	14,913.36	52,217.68	67,131.04
" " 6.....	551,477.82	105,141.31	656,619.13
" " 8.....	68,570.00	73,473.14	142,043.14
" " 20.....	774,247.65	43,944.24	818,191.89
" " 52.....	6,896.01	54,615.72	61,511.73
" " 53.....	39,428.55	54,623.45	94,052.00
" " 55.....	523.70	10,970.80	11,494.50
" " 56.....	20,733.97	20,884.40	41,618.37
" " 97.....	23,292.72	27,539.86	50,832.58
" " 99.....	10,108.82	45,254.30	55,363.12
" " 102.....	242.24	22,951.22	23,193.46
Queen Elizabeth Way.....	6,516,098.88	50,453.92	6,566,552.80
Freeman-Wolfe Island.....	42,113.67	.....	42,113.67
Miscellaneous Surveys.....	9,430.03	.....	9,430.03
Connecting Links:			
Town of Dundas.....	.....	75.10	75.10
City of Hamilton.....	294,089.97	.....	294,089.97
	\$8,510,387.69	\$ 629,793.59	\$9,140,181.28

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
York:			
Highway No. 2.....	\$ 609.44	\$ 3,403.08	\$ 4,012.52
" " 2A.....	222.79	7,454.56	7,677.35
" " 5.....	66,078.72	5,866.93	71,945.65
" " 7.....	111,870.38	95,309.71	207,180.09
" " 9.....	2,346.76	18,553.90	20,900.66
" " 11.....	314,208.79	133,020.24	447,229.03
" " 27.....	958,988.16	171,587.58	1,130,575.74
" " 47.....	31,471.11	30,363.81	61,834.92
" " 48.....	336,936.51	204,678.50	541,615.01
" " 49.....	33,671.26	9,749.05	43,420.31
" " 50.....	9,270.05	17,409.72	26,679.77
" " 400.....	363,219.10	193,376.21	556,595.31
" " 401.....	1,179,922.85	372,265.16	1,552,188.01
Queen Elizabeth Way.....	373,997.49	85,660.33	459,657.82
Queensway, Toronto.....	570,988.06	.....	570,988.06
Bloor Street, Toronto.....	1,083,369.54	.....	1,083,369.54
Yonge Street, Toronto.....	163,531.96	.....	163,531.96
Dundas Street, Toronto.....	31,266.05	.....	31,266.05
Lakeshore Express Way, Toronto.....	1,211,610.48	.....	1,211,610.48
Miscellaneous Surveys.....	804.84	.....	804.84
Sidewalks:			
East side of Highway No. 11			
Steeles Ave. to Clarke Street.....	1,238.26	.....	1,238.26
Yonge Street-Hwy. 401 Interchange.....	5,169.15	.....	5,169.15
Connecting Links:			
Town of Richmond Hill.....	.....	977.98	977.98
	\$6,850,791.75	\$1,349,676.76	\$8,200,468.51
DISTRICT			
Algoma-Manitoulin:			
Highway No. 17.....	\$5,236,624.51	\$ 384,129.61	\$5,620,754.12
" " 68.....	496,393.09	286,355.25	782,748.34
" " 129.....	112,772.56	157,199.07	269,971.63
Ferries.....	.....	74,263.60	74,263.60
Secondary Road No. 538.....	25.67	3,833.48	3,859.15
" " " 540.....	18,151.74	204,814.20	222,965.94
" " " 542.....	.....	150,055.12	150,055.12
" " " 546.....	45.58	75,823.17	75,868.75
" " " 548.....	7,942.54	88,521.09	96,463.63
" " " 550.....	83.03	27,909.10	27,992.13
" " " 551.....	.....	49,076.61	49,076.61
" " " 552.....	25.67	18,035.22	18,060.89
" " " 553.....	25.67	.....	25.67
" " " 554.....	14,920.34	17,923.00	32,843.34
" " " 555.....	25.67	12,274.59	12,300.26
" " " 556.....	43,130.53	53,634.58	96,765.11
" " " 557.....	117.24	20,332.29	20,449.53
" " " 561.....	424.39	58,546.99	58,971.38
" " " 563.....	25.67	14,914.30	14,939.97
" " " 565.....	25.67	7,597.19	7,622.86
" " " 612.....	1,049,469.36	30,431.60	1,079,900.96
Hornepayne Access Road.....	1,181.42	.....	1,181.42
Burwash Killarney.....	158,304.91	.....	158,304.91
Miscellaneous Surveys.....	113,226.45	.....	113,226.45
Sidewalks:			
Mindemoya.....	137.18	.....	137.18
Unincorporated Township Roads:			
Campbell.....	.....	8,220.46	8,220.46
Dawson.....	.....	2,512.23	2,512.23
Mills.....	.....	3,272.01	3,272.01
Robinson.....	.....	7,559.50	7,559.50
Aberdeen.....	14,931.69	1,696.35	16,628.04
Aweres.....	.....	3,330.08	3,330.08
Batchewana Indian Reserve.....	.....	2,996.25	2,996.25
Bridgeland.....	.....	584.34	584.34

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Bright.....	\$	\$ 334.75	\$ 334.75
Cobden.....	.....	363.56	363.56
Deroche.....	525.12	.....	525.12
Fenwick.....	3,824.27	3,388.83	7,213.10
Galbraith.....	.....	3,500.24	3,500.24
Garden River Indian Reserve.....	.....	2,254.44	2,254.44
Gaudette.....	.....	596.39	596.39
Gladstone.....	1,314.85	26.00	1,340.85
Goulais Indian Reserve.....	.....	950.70	950.70
Havilland.....	.....	160.00	160.00
Hodgins.....	.....	104.05	104.05
Houghton.....	.....	584.34	584.34
Kars.....	3,722.89	1,013.77	4,736.66
Kirkwood.....	.....	584.35	584.35
Lewis.....	4,035.63	166.64	4,202.27
Mississagi Indian Reserve.....	.....	1,153.49	1,153.49
Montgomery.....	.....	120.65	120.65
Morin.....	.....	199.68	199.68
McMahon.....	.....	646.91	646.91
Parkinson.....	.....	15.63	15.63
Patton.....	.....	1,165.56	1,165.56
Pennefather.....	602.40	.....	602.40
Plummer.....	.....	5,114.39	5,114.39
Ranger Lake Area.....	10,189.49	2,650.54	12,840.03
Rose.....	.....	1,351.97	1,351.97
Serpent River Indian Reserve.....	.....	2,787.25	2,787.25
Shedden.....	.....	6,443.57	6,443.57
Shields.....	.....	198.80	198.80
Spanish River Indian Reserve.....	2,895.00	5,564.95	8,459.95
Striker.....	285.22	467.30	752.52
Thessalon Indian Reserve.....	.....	1,250.18	1,250.18
Township 28 Range 24.....	435.71	.....	435.71
Township 125.....	.....	100.00	100.00
Township 188.....	.....	145.45	145.45
Vankoughnet.....	2,199.10	193.34	2,392.44
Victoria.....	.....	3,098.42	3,098.42
Wells.....	1,298.63	.....	1,298.63
Development Roads:			
Mission Harbour Road.....	14,854.49	.....	14,854.49
Centre Line Road.....	20.62	.....	20.62
Dean Lake Road.....	92.37	.....	92.37
Mindemoya southerly.....	2,972.76	.....	2,972.76
Fourth Line Tarentorus Township.....	257.03	.....	257.03
	\$7,317,536.16	\$1,812,537.42	\$9,130,073.58
Cochrane:			
Highway No. 11.....	\$5,147,539.07	\$ 816,193.65	\$5,963,732.72
" " 67.....	909.65	54,660.23	55,569.88
" " 101.....	571,441.92	211,010.27	782,452.19
Ferries.....	.....	24,779.00	24,779.00
Secondary Road No. 572.....	144,910.28	9,000.37	153,910.65
" " 574.....	666.79	63,003.55	63,670.34
" " 575.....	.....	3,123.55	3,123.55
" " 576.....	.....	2,236.32	2,236.32
" " 577.....	2,987.43	26,379.11	29,366.54
" " 578.....	119.22	19,462.93	19,582.15
" " 579.....	.....	59,616.50	59,616.50
" " 581.....	.....	4,359.94	4,359.94
" " 583.....	104.77	87,890.54	87,995.31
" " 610.....	4,797.80	38,312.73	43,110.53
Miscellaneous Surveys.....	29.26	.....	29.26
Unincorporated Township Roads:			
Deloro.....	.....	528.80	528.80
Evelyn.....	.....	2,355.86	2,355.86
German.....	.....	6,086.74	6,086.74

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Godfrey.....	\$ 3,691.79	\$ 1,953.57	\$ 5,645.36
Jamieson.....	4,657.76	1,953.56	6,611.32
Matheson.....		1,984.93	1,984.93
Ogden.....		324.42	324.42
Robb.....	3,691.80	1,953.57	5,645.37
Shaw.....		3,827.35	3,827.35
Barker.....		183.25	183.25
Brower.....	2,446.36	1,444.84	3,891.20
Calder.....		4,906.84	4,906.84
Casgrain.....	2,178.29	5,958.25	8,136.54
Clute.....	3,018.66	5,985.23	9,003.89
Devitt.....	418.78	4,983.54	5,402.32
Eilber.....	2,799.03	3,298.97	6,098.00
Fournier.....	1,454.33	2,784.88	4,239.21
Fox.....	2,812.78	2,435.11	5,247.89
Franz.....		20.79	20.79
Haggart.....		227.96	227.96
Hanlan.....	4,859.08	5,135.80	9,994.88
Idington.....		1,669.14	1,669.14
Kendall.....	7,698.20	10,822.81	18,521.01
Kennedy.....		1,711.78	1,711.78
Lamarche.....		5,397.87	5,397.87
Lowther.....		3,876.05	3,876.05
McCrea.....	11,180.40	2,452.27	13,632.67
Nansen.....	403.63	4,199.21	4,602.84
Newmarket.....		821.24	821.24
O'Brien.....		5,747.35	5,747.35
Owens.....	6,434.72	5,583.04	12,017.76
Pyne.....		2,317.08	2,317.08
Way.....		10,732.91	10,732.91
Williamson.....		2,755.16	2,755.16
Development Roads:			
Craft Creek Road.....	40,487.70		40,487.70
Genier and Boundary Roads.....	19,961.16		19,961.16
Hislop Loop.....		20,290.60	20,290.60
Sideroad 3 and 4 Playfair Township.....		4,924.89	4,924.89
	\$5,991,700.66	\$1,561,664.35	\$7,553,365.01
Haliburton:			
Highway No. 28.....	\$ 5,664.71	\$ 14,261.09	\$ 19,925.80
" " 35.....	134,646.36	78,715.98	213,362.34
" " 60.....	40,300.35	20,562.01	60,862.36
" " 121.....	103,649.00	70,349.42	173,998.42
Secondary Road No. 500.....	373,941.88	106,697.99	480,639.87
" " " 519.....	36,062.40	84,604.79	120,667.19
" " " 530.....	913.99	39,337.05	40,251.04
Bicroft Mine Road.....	45,548.38		45,548.38
Miscellaneous Surveys.....	42,362.57		42,362.57
Development Roads:			
Fletcher Lake Road.....	35,175.89		35,175.89
Highland Grove-Kidds Corner.....	5,711.21		5,711.21
Kushog Lake Road.....	20,628.02		20,628.02
	\$ 844,604.76	\$ 414,528.33	\$1,259,133.09
Kenora:			
Highway No. 17.....	\$2,153,016.01	\$ 428,527.68	\$2,581,543.69
" " 70.....	12,389.44	91,625.52	104,014.96
" " 72.....	3,124.29	98,613.33	101,737.62
" " 105.....	217,656.70	219,073.26	436,729.96
" " 116.....		21,563.19	21,563.19
" " 119.....	12,389.27	36,830.77	49,220.04
" " 125.....	150,673.46	14,707.09	165,380.55
" " 128.....	32,666.93	52,799.32	85,466.25

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Secondary Road No. 594.....	\$ 12,307.41	\$ 30,037.80	\$ 42,345.21
" " " 596.....	374.80	24,569.30	24,944.10
" " " 598.....	58.99	3,273.08	3,332.07
" " " 599.....	6,596.11		6,596.11
" " " 601.....		24,450.16	24,450.16
" " " 603.....		3,652.41	3,652.41
" " " 604.....		21,441.24	21,441.24
" " " 605.....	1,367.50	14,353.32	15,720.82
" " " 609.....		12,329.70	12,329.70
" " " 618.....		10,499.91	10,499.91
Miscellaneous Surveys.....	713.69		713.69
Connecting Link:			
Town of Kenora.....		8,262.19	8,262.19
Unincorporated Township Roads:			
Aubrey East.....	957.91	2,884.38	3,842.29
Boys.....		690.97	690.97
Britton.....		1,432.47	1,432.47
Devonshire.....		162.23	162.23
Drayton.....		427.03	427.03
Drayton Reserve.....		193.15	193.15
Eton.....	3,597.11	4,282.53	7,879.64
Ewart.....	4,013.25		4,013.25
Gidley.....		288.03	288.03
Indian Reserve No. 27.....		1,792.94	1,792.94
Kirkup.....		368.53	368.53
Melgund.....	6,419.69	1,968.12	8,387.81
Mutrie.....		3,043.64	3,043.64
North of Buller.....		18.75	18.75
Pellatt.....	2,151.62	3,338.46	5,490.08
Redditt.....	1,608.88	1,094.69	2,703.57
Redvers.....	1,607.39	1,739.71	3,347.10
Rowell.....		533.36	533.36
Rugby.....	1,151.16	3,215.17	4,366.33
Shoal Lake Indian Reserve.....	4,013.26		4,013.26
Smellie.....		69.61	69.61
South of Pellatt.....	469.81	2,157.42	2,627.23
Southworth.....	1,508.95	1,126.00	2,634.95
Van Horne.....	3,323.12	1,975.28	5,298.40
Vermilion Additional.....	1,953.85	2,580.35	4,534.20
Wabigoon.....	1,607.38	1,739.71	3,347.09
Wainwright.....	1,998.35	1,447.15	3,445.50
Zealand.....	9,266.64	9,061.92	18,328.56
Development Roads:			
Anderson Road and Loop.....	17,552.10		17,552.10
Hammell-Forestry Road.....	3,609.82		3,609.82
	\$2,670,144.89	\$1,164,240.87	\$3,834,385.76
Muskoka:			
Highway No. 11.....	\$2,426,582.49	\$ 86,846.42	\$2,513,428.91
" " 35.....	446,732.70	71,306.50	518,039.20
" " 60.....	4,726.37	32,792.03	37,518.40
" " 69.....	Cr. 71,071.53	41,540.53	Cr. 29,531.00
" " 103.....	1,231,789.25		1,231,789.25
" " 118.....	160,323.62	141,029.39	301,353.01
" " 400.....	10,532.97		10,532.97
Secondary Road No. 514.....	5,795.91	16,436.87	22,232.78
" " 516.....		46,172.81	46,172.81
" " 525.....		2,121.51	2,121.51
" " 527.....	100.00	51,605.81	51,705.81
" " 532.....	2,149.63	45,725.93	47,875.56
Miscellaneous Surveys.....	1,377.54		1,377.54
Connecting Links:			
Town of Bracebridge.....		332.09	332.09
Town of Gravenhurst.....		2,271.92	2,271.92

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Muskoka (Cont'd):			
Town of Huntsville.....	\$	\$ 2,387.16	\$ 2,387.16
Village of Port Carling.....	.....	3,830.70	3,830.70
Unincorporated Township Roads:			
Baxter.....	.....	8,144.15	8,144.15
Sinclair.....	.....	6,290.12	6,290.12
Development Roads:			
Muskoka Falls-Vankoughnet.....	16,222.99	.....	16,222.99
Lake of Bays Road.....	24,673.64	.....	24,673.64
Peninsula Road.....	25,374.60	.....	25,374.60
Santa's Village Road.....	1,899.84	.....	1,899.84
Concession No. 3 Morrison Township...	7,615.60	.....	7,615.60
Ravenscliffe Road.....	12,725.88	.....	12,725.88
Huntsville-Rosseau.....	45,260.50	.....	45,260.50
Brackenrig Road.....	4,329.91	.....	4,329.91
	\$4,357,141.91	\$ 558,833.94	\$4,915,975.85
Nipissing:			
Highway No. 11.....	\$ 60,535.89	\$ 182,616.96	\$ 243,152.85
" " 17.....	304,068.68	217,752.39	521,821.07
" " 60.....	40,550.45	103,234.77	143,785.22
" " 63.....	32,933.52	81,954.80	114,888.32
" " 64.....	191,527.66	248,429.94	439,957.60
" " 94.....	.....	15,115.06	15,115.06
" " 127.....	10,327.29	41,882.03	52,209.32
Secondary Road No. 523.....	.....	31,385.54	31,385.54
" " " 528.....	9.45	3,005.94	3,015.39
" " " 531.....	.....	4,848.32	4,848.32
" " " 533.....	695.26	56,949.31	57,644.57
" " " 539.....	5,191.33	82,640.35	87,831.68
" " " 539A.....	.....	1,015.26	1,015.26
North Bay Airport Road.....	.....	9,426.73	9,426.73
Miscellaneous Surveys.....	29.57	.....	29.57
Sidewalks:			
Widdifield Township Highway No. 11..	7,627.69	.....	7,627.69
Connecting Links:			
Town of Sturgeon Falls.....	.....	993.55	993.55
Unincorporated Township Roads:			
Airy.....	1,412.26	2,184.11	3,596.37
Dickens.....	.....	3,535.45	3,535.45
Lyell.....	203.52	.....	203.52
Sabine.....	203.53	2,645.34	2,848.87
Badgerow.....	7,584.00	3,993.97	11,577.97
Bastedo.....	.....	668.58	668.58
Boulter.....	.....	16.25	16.25
Clement.....	.....	208.72	208.72
Crerar.....	.....	4,040.26	4,040.26
Dana.....	.....	208.72	208.72
Falconer.....	2,623.57	3,914.10	6,537.67
Gibbons.....	.....	2,100.35	2,100.35
Gladman.....	.....	35.00	35.00
Grant.....	1,305.11	3,484.04	4,789.15
Hugel.....	4,077.47	3,676.80	7,754.27
Kirkpatrick.....	2,924.46	5,538.38	8,462.84
Lauder.....	.....	2,479.01	2,479.01
Loudon.....	.....	58.78	58.78
MacPherson.....	8,790.16	7,899.09	16,689.25
Pardo.....	.....	41.74	41.74
Pentland.....	.....	130.47	130.47
Phelps.....	.....	5,701.83	5,701.83
Best.....	.....	124.60	124.60
Gillies.....	199.65	106.80	306.45
Strathy.....	.....	1,408.79	1,408.79
Development Roads:			
Alderdale-Chiswick.....	Cr. 126.85	.....	Cr. 126.85
Booth Truck.....	2,382.60	.....	2,382.60

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing (Cont'd):			
Nosbonsing Lake Road.....	\$ 25,607.30	\$	\$ 25,607.30
Mattawa Westerly.....	7,548.80	.....	7,548.80
Concession No. 16			
Township of Chisholm.....	.....	15,672.94	15,672.94
Cache Bay-Caderette.....	.....	2,989.66	2,989.66
Main St., Verner.....	1,150.80	.....	1,150.80
	\$ 719,383.17	\$1,154,114.73	\$1,873,497.90
Parry Sound:			
Highway No. 11.....	\$ 471,375.12	\$ 147,609.16	\$ 618,984.28
" " 69.....	1,021,194.14	271,307.96	1,292,502.10
" " 94.....	.....	1,318.61	1,318.61
" " 124.....	263,040.16	130,974.62	394,014.78
Secondary Road No. 510.....	.....	2,638.11	2,638.11
" " " 518.....	81,297.08	94,899.28	176,196.36
" " " 520.....	6,241.54	68,133.69	74,375.23
" " " 522.....	79,550.77	131,058.21	210,608.98
" " " 524.....	.....	5,667.46	5,667.46
" " " 526.....	.....	7,181.75	7,181.75
" " " 529.....	.....	5,649.49	5,649.49
" " " 532.....	98,293.41	44,957.75	143,251.16
" " " 534.....	217.30	102,498.71	102,716.01
Sidewalks:			
Dunchurch.....	274.06	.....	274.06
Unincorporated Township Roads:			
Bethune.....	4,908.56	4,626.33	9,534.89
Burpee.....	2,505.00	1,465.03	3,970.03
Conger.....	2,953.67	1,826.40	4,780.07
Croft.....	6,858.55	4,625.09	11,483.64
Ferguson.....	4,997.58	2,033.97	7,031.55
Gurd.....	4,980.06	6,206.36	11,186.42
Hardy.....	2,464.11	4,460.62	6,924.73
Harrison.....	3,708.58	1,398.60	5,107.18
Henvey.....	1,994.23	3,665.81	5,660.04
Laurier.....	4,436.18	3,883.76	8,319.94
Lount.....	3,999.69	5,364.62	9,364.31
McConkey.....	2,146.34	2,615.75	4,762.09
McKenzie.....	2,504.99	1,465.04	3,970.03
Mills.....	2,464.10	4,460.61	6,924.71
Monteith.....	1,996.40	2,839.82	4,836.22
Mowat.....	1,179.34	.....	1,179.34
Patterson.....	3,837.25	3,521.21	7,358.46
Pringle.....	6,971.68	4,348.28	11,319.96
Proudfoot.....	6,987.00	4,433.94	11,420.94
Spence.....	2,981.92	7,419.20	10,401.12
Wallbridge.....	4,641.52	3,894.49	8,536.01
Wilson.....	2,146.34	2,615.75	4,762.09
Development Roads:			
Peninsula Road.....	35,451.57	.....	35,451.57
Lighthouse Beach Road.....	.....	26,729.73	26,729.73
Booth Track Road.....	595.65	.....	595.65
Old Nipissing Road.....	4,401.80	.....	4,401.80
Orrville-Rosseau.....	12,831.61	.....	12,831.61
Machar Township Sideroad			
Nos. 20 and 21.....	9,980.83	.....	9,980.83
Blackstone Lake Road.....	15,092.49	.....	15,092.49
Burden Lake Road.....	15,583.11	.....	15,583.11
Strong Township Sideroad No. 30.....	15,187.92	.....	15,187.92
Green Acres Road.....	6,150.78	.....	6,150.78
Middle River Road.....	17,522.65	.....	17,522.65
Joly Township Concession 10			
and 11 Road.....	4,649.38	.....	4,649.38
Axe Lake Road.....	5,571.86	.....	5,571.86
Wades Landing Road.....	21,476.99	.....	21,476.99

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
South Himsworth Township			
Concession 12 Road.....	\$ 24,729.21	\$	\$ 24,729.21
Balsam Lake Road.....	10,025.20	.....	10,025.20
McDougall Road.....	19,682.87	.....	19,682.87
	\$2,322,080.59	\$1,117,795.21	\$3,439,875.80
Rainy River:			
Highway No. 70.....	\$ 51.07	\$ 66,512.94	\$ 66,564.01
" " 71.....	167,534.01	103,648.59	271,182.60
" " 120.....	268,408.86	65,055.35	333,464.21
Secondary Road No. 592.....		6,697.57	6,697.57
" " " 600.....		58,377.89	58,377.89
" " " 602.....	17,938.82	41,366.47	59,305.29
" " " 611.....		17,633.02	17,633.02
" " " 613.....	1,811.37	42,267.49	44,078.86
" " " 615.....	8,063.22	27,905.89	35,969.11
" " " 617.....	2,622.46	23,631.29	26,253.75
" " " 619.....	1,412.70	74,125.18	75,537.88
" " " 621.....	71,344.82	71,482.55	142,827.37
" " " 622.....	33,033.85	8,740.98	41,774.83
" " " 623.....		25,507.77	25,507.77
Miscellaneous Surveys.....	105,755.56		105,755.56
Connecting Links:			
Town of Fort Frances.....		266.40	266.40
Town of Rainy River.....		151.96	151.96
Unincorporated Township Roads:			
Dance.....		1,224.42	1,224.42
Dewart.....	1,830.96	1,875.54	3,706.50
Indian Reserve No. 11.....		75.25	75.25
" " " 17A.....		1,000.00	1,000.00
" " " 18B.....		320.46	320.46
Miscampbell.....		1,954.53	1,954.53
Nelles.....	632.88	2,306.64	2,939.52
North of Fleming.....		11.00	11.00
Sifton.....	2,598.00	3,287.39	5,885.39
Spohn.....		392.89	392.89
Sutherland.....		1,102.92	1,102.92
Development Roads:			
Concession 11 Burriss.....	20,862.91		20,862.91
Saturn Ave., Extension Atikokan.....	40,020.00		40,020.00
	\$ 743,921.49	\$ 646,922.38	\$1,390,843.87
Sudbury:			
Highway No. 17.....	\$1,605,261.18	\$ 222,612.66	\$1,827,873.84
" " 64.....	490,228.96	75,304.65	565,533.61
" " 68.....	425,267.66	109,092.05	534,359.71
" " 69.....	185,800.90	143,335.50	329,136.40
" " 129.....	529,603.46	70,465.95	600,069.41
Secondary Road No. 528.....	49.79	20,752.15	20,801.94
" " " 528A.....		7,990.69	7,990.69
" " " 535.....	25,108.61	90,502.74	115,611.35
" " " 536.....	50,545.64	5,241.05	55,786.69
" " " 537.....	9,905.19	21,452.59	31,357.78
" " " 539.....	3,980.13	13,023.20	17,003.33
" " " 541.....	41,270.69	43,483.20	84,753.89
" " " 543.....		10,434.66	10,434.66
" " " 544.....	1,411,937.64	124,507.50	1,536,445.14
" " " 545.....	37,834.17	30,360.12	68,194.29
" " " 547.....		1,764.21	1,764.21
" " " 549.....	81,289.48	43,773.08	125,062.56
" " " 553.....		52,698.13	52,698.13
" " " 560.....	92.89	104,199.53	104,292.42
" " " 606.....	10,747.77	1,657.99	12,405.76

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Secondary Road No. 607.....	\$ 565.68	\$ 23,751.00	\$ 24,316.68
“ “ “ 607A.....	10.78	946.22	957.00
“ “ “ 616.....	3,009.20	35,747.91	38,757.11
“ “ “ 624.....	394.95	.....	394.95
Kukatash-Palomar.....	519.75	.....	519.75
Burwash-Killarney.....	4,951.00	.....	4,951.00
Miscellaneous Surveys.....	2,643.69	.....	2,643.69
Sidewalks:			
Garson.....	5,133.55	.....	5,133.55
Noelville.....	831.21	.....	831.21
Unincorporated Township Roads:			
Afton.....	.....	83.49	83.49
Bigwood.....	.....	5,158.76	5,158.76
Davis.....	.....	41.74	41.74
Delamere.....	2,649.90	3,153.54	5,803.44
Hoskin.....	.....	896.62	896.62
Haddo.....	.....	209.19	209.19
Henry.....	.....	1,254.07	1,254.07
Janes.....	.....	41.74	41.74
McNish.....	.....	208.72	208.72
Salter Broken Front.....	.....	1,253.36	1,253.36
Scollard.....	.....	1,392.49	1,392.49
Mattagami.....	1,666.66	.....	1,666.66
Noble.....	1,666.67	.....	1,666.67
Togo.....	1,666.67	.....	1,666.67
Awrey.....	.....	63.28	63.28
Broder.....	6,336.60	4,928.82	11,265.42
Burwash.....	.....	2,490.98	2,490.98
Cascaden.....	.....	491.30	491.30
Cleland.....	.....	3,491.84	3,491.84
Curtin.....	.....	112.55	112.55
Dieppe.....	.....	640.00	640.00
Dill.....	2,256.28	365.90	2,622.18
Dryden.....	1,615.51	2,311.42	3,926.93
Eden.....	.....	83.60	83.60
Ermatinger.....	.....	517.22	517.22
Fairbank.....	.....	2,301.48	2,301.48
Foster.....	.....	1,935.15	1,935.15
Hawley.....	.....	240.64	240.64
Lorne.....	.....	2,188.97	2,188.97
Loughrin.....	880.00	3,239.86	4,119.86
Louise.....	.....	3,141.22	3,141.22
MacLennan.....	.....	1,735.11	1,735.11
Merritt.....	.....	5,999.31	5,999.31
Norman.....	.....	410.07	410.07
Secord.....	.....	283.56	283.56
Snider.....	674.88	336.13	1,011.01
Street.....	.....	19.46	19.46
Tilton.....	.....	116.88	116.88
Trill.....	.....	364.94	364.94
Ulster.....	.....	407.03	407.03
Wisner.....	.....	478.29	478.29
McKinnon.....	514.82	1,037.83	1,552.65
Shakespeare.....	.....	450.80	450.80
Development Roads:			
Val Caron-Chelmsford.....	5,450.90	.....	5,450.90
Bancroft Drive.....	100,763.58	.....	100,763.58
Long Lake Road.....	.....	7,877.66	7,877.66
Warren-St. Charles.....	.....	21,260.10	21,260.10
	\$5,053,126.44	\$1,336,111.90	\$6,389,238.34

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming:			
Highway No. 11.....	\$ 573,689.75	\$ 161,174.39	\$ 734,864.14
" " 65.....	111,557.01	179,061.02	290,618.03
" " 66.....	371,909.56	160,609.11	532,518.67
" " 101.....	102,464.20	23,433.64	125,897.84
" " 112.....	904,828.38	14,979.71	919,808.09
Secondary Road No. 558.....	21,490.60	42,986.66	64,477.26
" " " 560.....	28,554.46	170,050.19	198,604.65
" " " 562.....	1,979.38	13,404.84	15,384.22
" " " 564.....	.....	13,172.19	13,172.19
" " " 566.....	.....	18,112.86	18,112.86
" " " 567.....	2,973.15	60,176.08	63,149.23
" " " 568.....	.....	1,867.93	1,867.93
" " " 569.....	68.03	39,176.82	39,244.85
" " " 570.....	.....	2,797.24	2,797.24
" " " 571.....	166.94	4,118.26	4,285.20
" " " 573.....	.....	33,496.88	33,496.88
" " " 616.....	.....	18,443.42	18,443.42
Sidewalk:			
Bucke Township Highway 11.....	2,150.00	.....	2,150.00
Connecting Links:			
Town of Cobalt.....	.....	1,857.18	1,857.18
Town of Haileybury.....	.....	173.88	173.88
Town of New Liskeard.....	.....	206.36	206.36
Unincorporated Township Roads:			
Barber.....	.....	357.25	357.25
Bayly.....	648.25	721.59	1,369.84
Beauchamp.....	5,926.18	5,962.33	11,888.51
Benoit.....	.....	1,288.60	1,288.60
Blain.....	.....	557.23	557.23
Boston.....	.....	12.50	12.50
Bryce.....	.....	312.30	312.30
Cane.....	4,181.41	3,720.74	7,902.15
Catherine.....	6,445.33	1,421.03	7,866.36
Eby.....	.....	3,049.09	3,049.09
Firstbrook.....	452.29	.....	452.29
Grenfell.....	.....	1,272.59	1,272.59
Henwood.....	6,072.32	10,630.58	16,702.90
Ingram.....	2,984.73	7,120.21	10,104.94
Keefer.....	.....	1,780.41	1,780.41
Lebel.....	.....	532.61	532.61
Maisonville.....	.....	429.54	429.54
Marquis.....	8,510.97	9,028.50	17,539.47
Marter.....	8,995.23	6,687.42	15,682.65
Otto.....	3,329.18	4,550.66	7,879.84
Pacaud.....	464.50	7,558.58	8,023.08
Pense.....	933.08	2,496.03	3,429.11
Robillard.....	996.80	7,339.46	8,336.26
Savard.....	5,289.15	6,097.16	11,386.31
Sharpe.....	498.40	3,334.81	3,833.21
Development Roads:			
Larder Lake southerly.....	13,605.40	.....	13,605.40
Dawson Point Road.....	5,498.51	.....	5,498.51
Twin Lake to Highway No. 65.....	2,482.09	.....	2,482.09
Marter Boundary to Highway No. 11..	33,753.86	.....	33,753.86
Goodfish Road.....	27,837.86	.....	27,837.86
	\$2,260,737.00	\$1,045,559.88	\$3,306,296.88
Thunder Bay:			
Highway No. 11.....	\$ 37,004.98	\$ 303,081.86	\$ 340,086.84
" " 17.....	7,613,630.13	603,622.05	8,217,252.18
" " 17A.....	18,405.26	45,335.01	63,740.27
" " 61.....	22,526.82	67,750.41	90,277.23
" " 120.....	708,884.44	94,055.28	802,939.72
" " 130.....	44,627.33	46,470.86	91,098.19

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Secondary Road No. 580.....	\$ 11.29	\$ 2,474.89	\$ 2,486.18
“ “ “ 582.....	11.29	8,600.90	8,612.19
“ “ “ 584.....	11.29	1,119.92	1,131.21
“ “ “ 585.....	11.29	22,279.02	22,290.31
“ “ “ 586.....	1,405.00	3,011.58	4,416.58
“ “ “ 587.....	9,374.44	36,027.67	45,402.11
“ “ “ 588.....	24,690.85	52,984.75	77,675.60
“ “ “ 589.....	11.29	38,406.57	38,417.86
“ “ “ 590.....	11,062.76	50,866.92	61,929.68
“ “ “ 591.....	11.29	10,541.88	10,553.17
“ “ “ 593.....	.....	15,216.31	15,216.31
“ “ “ 595.....	275.97	61,892.25	62,168.22
“ “ “ 597.....	.....	8,299.21	8,299.21
“ “ “ 599.....	76,538.10	127,140.68	203,678.78
“ “ “ 608.....	.....	18,079.31	18,079.31
“ “ “ 614.....	54,790.11	76,855.36	131,645.47
“ “ “ 625.....	289.93	.....	289.93
Heron Bay Access Road.....	490,225.80	3,120.98	493,346.78
Geraldton—Cut-off Highway 11-584.....	.....	4,357.01	4,357.01
Geraldton North.....	.....	2,190.99	2,190.99
Miscellaneous Surveys.....	1,237.31	.....	1,237.31
Connecting Links:			
City of Port Arthur.....	55,168.47	.....	55,168.47
Unincorporated Township Roads:			
Ames.....	.....	27.50	27.50
Armstrong.....	.....	1,929.64	1,929.64
Dawson Road Lots.....	10,266.02	1,862.06	12,128.08
Devon.....	1,933.88	1,614.65	3,548.53
Forbes.....	1,869.68	2,319.23	4,188.91
Fowler.....	3,498.76	2,755.03	6,253.79
Goldie.....	530.00	508.46	1,038.46
Gorham.....	6,717.27	9,929.54	16,646.81
Jacques.....	1,192.35	3,861.11	5,053.46
Jackfish.....	896.00	457.86	1,353.86
Kilkenny.....	1,000.00	889.30	1,889.30
Leduc (Unsurveyed).....	.....	13.07	13.07
Lybster.....	1,727.79	2,744.47	4,472.26
Lyons.....	972.78	606.27	1,579.05
Marks.....	1,771.44	3,033.13	4,804.57
Pearson.....	1,692.50	5,188.34	6,880.84
Rosspoint.....	600.00	892.46	1,492.46
Scoble.....	1,442.58	1,981.27	3,423.85
Sibley.....	1,255.73	2,947.04	4,202.77
Sterling.....	1,188.25	1,453.73	2,641.98
Strange.....	1,109.23	2,333.93	3,443.16
Upsala.....	1,173.24	1,796.25	2,969.49
Ware.....	19,721.01	8,804.37	28,525.38
Development Roads:			
North-South Road, Pardee.....	14,986.08	.....	14,986.08
Paipoonge Township Road.....	32,121.12	.....	32,121.12
Mountain Road.....	14,552.71	.....	14,552.71
Fish Hatchery Road.....	88.00	.....	88.00
Neebing Township Side Road.....	7,523.18	.....	7,523.18
Red Rock Road.....	6,597.34	.....	6,597.34
John St. McIntyre Township.....	83,383.56	.....	83,383.56
Blake Township Concession 7 and 8 Road.....	20,838.26	.....	20,838.26
Cloud Bay Road, Crooks Township.....	.....	6,257.54	6,257.54
Nipigon Township Road.....	.....	4,304.25	4,304.25
O'Connor Township Concession No. 4.....	.....	22,498.24	22,498.24
Collingwood Bay Road.....	.....	2,929.59	2,929.59
Town Line Road Oliver-McIntyre Townships.....	74,182.48	.....	74,182.48
	\$9,485,036.68	\$1,797,720.00	\$11,282,756.68
COUNTY AND DISTRICT TOTAL	\$123,343,661.98	\$31,036,801.33	\$154,380,463.31

	CONSTRUCTION	MAINTENANCE	TOTAL
Expenditures Allocated to Roads by County and District as shown preceding this tabulation.....	\$123,343,662	\$ 31,036,801	\$154,380,463
Sundry Unallocated District Office Administrative, Engineering, Building, and Inventory Charges.....	1,769,310	3,501,360	5,270,670
Total Expenditures Incurred by or Allocated to District Offices.....	\$125,112,972	\$ 34,538,161	\$159,651,133

APPENDIX No. 2

DEPARTMENT EXPENDITURE BY ROADS, ETC.

April 1, 1957 to March 31, 1958

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
2	Windsor-Quebec Boundary.....	542.2	\$5,358,137.38	\$1,297,864.88	\$6,656,002.26
2A	Florimac-Jct. Hwy. 401 and Hwy. 2.....	3.2	222.79	7,454.56	7,677.35
3	Windsor-Fort Erie.....	260.0	1,066,326.01	534,610.97	1,600,936.98
3A	Chambers Corners-Niagara Falls.....	24.8	1,187.22	34,789.61	35,976.83
3B	Jct. Hwy. No. 3-Windsor.....	6.0	3,346.90	6,923.17	10,270.07
3C	Ridgeway-Fort Erie.....	7.5	304.72	28,727.24	29,031.96
4	Port Stanley-Flesherton.....	155.5	92,067.76	628,610.03	720,677.79
5	Toronto-Paris (Via Dundas Street).....	65.6	1,229,516.17	180,738.43	1,410,254.60
6	Port Dover-Tobermory.....	225.1	2,505,548.86	689,606.96	3,195,155.82
7	Sarnia-Perth.....	403.6	5,235,379.41	755,154.88	5,990,534.29
7A	Manchester-Peterborough.....	41.3	14,967.09	79,821.70	94,788.79
8	Niagara Falls-Goderich.....	155.7	932,647.78	385,680.60	1,318,328.38
8A	St. Davids-Queenston.....	2.6		7,960.71	7,960.71
9	Schomberg-Kincardine.....	112.8	345,613.34	301,408.59	647,021.93
10	Port Credit-Owen Sound.....	105.0	479,596.07	245,893.03	725,489.10
11	Toronto-Nipigon.....	851.0	9,898,731.10	2,179,233.00	12,077,964.10
12	Whitby-Midland and Penetang	99.1	651,471.96	410,739.17	1,062,211.13
14	Pictou-Marmora.....	51.4	35,408.28	101,203.86	136,612.14
15	Ottawa-Kingston.....	131.0	666,120.21	296,972.79	963,093.00
16	Ottawa-Johnstown Corners.....	58.9	119,224.88	591,074.92	710,299.80
17	Quebec Boundary-Agawa River and Marathon- Manitoba Boundary.....	1,208.6	18,110,375.43	2,454,793.06	20,565,168.49
17A	Port Arthur-Hwy. No. 17.....	21.0	137,824.64	45,335.01	183,159.65
18	Leamington-Windsor.....	49.0	12,577.59	44,783.83	57,361.42
18A	Kingsville-Hwy. No. 18.....	20.0	1,179.47	99,225.01	100,404.48
19	Port Burwell-Tralee.....	92.2	456,654.30	169,687.73	626,342.03
20	Niagara Falls-Burlington.....	53.3	977,292.79	156,262.08	1,133,554.87
21	Morpeth-Owen Sound.....	207.0	1,041,453.77	365,690.41	1,407,144.18
22	London-Sarnia.....	61.5	402,967.22	61,563.44	464,530.66
23	Elginfield-Teviotdale.....	60.6	20,447.03	136,534.04	156,981.07
24	Port Dover-Collingwood.....	143.4	160,243.16	297,617.16	457,860.32
24A	Paris-Galt.....	13.1		21,932.20	21,932.20
25	Queen Elizabeth Way-Acton...	27.3	105,159.36	61,579.84	166,739.20
26	Barrie-Owen Sound.....	74.6	425,151.51	171,669.00	596,820.51
27	Long Branch-Penetang- Midland.....	91.8	1,084,170.78	388,720.25	1,472,891.03
28	Port Hope-Bancroft.....	95.9	160,126.10	139,793.82	299,919.92
29	Brockville-Arnrior.....	76.4	756,661.82	184,535.60	941,197.42
30	Brighton-Havelock.....	32.0	24,442.69	44,585.10	69,027.79
31	Morrisburg-Ottawa.....	48.4	1,177,302.74	84,450.79	1,261,753.53
32	Gananoque-Hwy. No. 15.....	12.4	6,933.04	24,540.57	31,473.61
33	Kingston-Stirling.....	87.4	249,620.61	174,020.40	423,641.01
34	Lancaster-Hawkesbury.....	38.1	6,255.47	74,946.25	81,201.72
35	Newcastle-Huntsville.....	136.1	2,144,037.47	433,789.06	2,577,826.53
35A	Hwy. No. 34-Fenelon Falls.....	2.2		3,453.16	3,453.16
36	Hwy. No. 7-Burleigh Falls.....	45.4	177,894.50	111,528.45	289,422.95
37	Belleville-Actinolite.....	29.3	19,816.29	73,781.84	93,598.13
38	Catawqui-Highway No. 7.....	43.8	124,859.50	128,135.19	252,994.69
39	Windsor-Belle River.....	21.5	136,278.79	17,676.71	153,955.50
40	Sarnia-Chatham.....	50.1	20,655.67	54,738.91	75,394.58
41	Pictou-Napanee-Pembroke.....	145.1	378,937.02	340,051.99	718,989.01
42	Forthton-Westport.....	34.0	12,452.01	67,228.53	79,680.54
43	Alexandria-Hwy. No. 31.....	38.7	233,833.20	73,284.50	307,117.70
44	Almonte-Carp.....	14.0		30,580.91	30,580.91
45	Cobourg-Norwood.....	33.0	267,787.57	63,904.13	331,691.70

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
46	Hwy. No. 7-Coboconk (Via Kirkfield).....	34.0	\$ 139,556.17	\$ 72,137.30	\$ 211,693.47
47	Hwy. No. 12-Hwy. No. 48.....	20.5	40,450.26	83,543.80	123,994.06
48	Hwy. No. 401-Beaverton.....	51.2	337,254.92	223,960.61	561,215.53
49	Kleinburg-Hwy. No. 50.....	3.5	33,671.26	9,749.05	43,420.31
50	Hwy. No. 7-Hwy. No. 9 (Via Bolton).....	18.0	54,435.22	120,659.61	175,094.83
51	Hwy. No. 24-Hwy. No. 10.....	2.5	75,029.68	10,421.27	85,450.95
52	Wentworth County Line- Hwy. No. 2.....	18.5	6,896.01	54,615.72	61,511.73
53	Eastwood-Hwy. No. 20 (Via Brantford).....	48.9	75,945.92	102,363.82	178,309.74
54	Cainsville-Cayuga.....	27.0	17,066.88	133,463.04	150,529.92
55	Hwy. No. 53-Hamilton.....	4.0	523.70	10,970.80	11,494.50
56	Jct. Hwy. No. 53 and 20- Canfield.....	15.5	21,909.61	39,105.26	61,014.87
57	Bismarck-Hwy. No. 3A.....	9.0	524.42	28,885.76	29,410.18
58	St. Catharines-Port Colborne.....	24.0	5,297.87	59,810.73	65,108.60
59	Woodstock-Delhi.....	26.5	13,357.55	64,337.13	77,694.68
60	Huntsville-Eganville.....	132.7	636,361.60	224,286.08	860,647.68
61	Fort William-International Boundary.....	42.9	22,526.82	67,750.41	90,277.23
62	Madoc-Pembroke.....	118.0	92,559.53	240,765.04	333,324.57
63	North Bay-Timiskaming.....	41.0	32,933.52	81,954.80	114,888.32
64	Hwy. No. 69-Marten River.....	91.9	681,756.62	323,734.59	1,005,491.21
65	Matachewan-Quebec Bound- ary (Via New Liskeard).....	80.7	111,557.01	179,061.02	290,618.03
66	Matachewan-Quebec Bound- ary (Via Kirkland Lake).....	62.7	371,909.56	160,609.11	532,518.67
67	Iroquois Falls-Hwy. No. 101.....	23.3	909.65	54,660.23	55,569.88
68	South Baymouth-McKerrow.....	77.2	921,660.75	395,447.30	1,317,108.05
69	Brechin-Parry Sound-Capreol.....	197.4	1,373,417.37	511,853.57	1,885,270.94
70	Hwy. No. 17-Hwy. No. 71.....	100.7	12,440.51	158,138.46	170,578.97
71	Fort Frances-Rainy River.....	58.9	167,534.01	103,648.59	271,182.60
72	Dinorwic-Sioux Lookout.....	48.0	3,124.29	98,613.33	101,737.62
73	Port Bruce-Dorchester Road.....	23.0	328.83	43,060.25	43,389.08
74	New Sarum-Nilestown.....	14.0	17,888.19	105,273.01	123,161.20
75	Wallacetown-Dutton.....	2.5	970.03	4,852.18	5,822.21
76	Eagle-Highway No. 2.....	11.4	1,236.98	6,222.39	7,459.37
77	New Glasgow-Rodney.....	4.0	120.07	7,944.02	8,064.09
78	Wallaceburg-Dresden.....	10.5	300.00	11,572.46	11,872.46
79	Hwy. No. 2-Hwy. No. 7.....	28.9	120,975.85	45,065.72	166,041.57
80	Hwy. No. 2-Alvinston.....	13.0	1,397.46	44,191.73	45,589.19
81	Delaware-Grand Bend.....	44.0	198,341.36	100,224.17	298,565.53
82	Hwy. No. 7-Port Franks.....	7.0	4,880.78	8,094.74	12,975.52
83	Hwy. No. 21-Hwy. No. 23.....	24.0	18,626.94	58,908.37	77,535.31
84	St. Joseph-Hensall.....	10.5	535,934.50	34,228.38	570,162.88
85	Kitchener-Elmira.....	12.0	14,462.42	18,521.03	32,983.45
86	Amberley-Hwy. No. 7.....	79.0	754,382.86	235,001.82	989,384.68
87	Bluevale-Harriston.....	19.5	50,895.50	45,185.82	96,081.32
88	Bondhead-Bradford.....	6.0	21,305.61	21,574.01	42,879.62
89	Primrose-Cookstown.....	23.5	352,032.04	63,491.97	415,524.01
90	Angus-Barrie.....	12.6	12,855.49	43,315.89	56,171.38
91	Duntroon-Stayner.....	5.2	.....	27,621.19	27,621.19
92	Elmvale-Wasaga Beach.....	9.0	46,593.97	23,422.54	70,016.51
93	Crown Hill-Waverley.....	17.5	7,131.59	79,959.34	87,090.93
94	Callander-Hwy. No. 17.....	6.5	.....	16,433.67	16,433.67
95	Wolfe Island North and South Road.....	7.0	9,355.86	24,280.07	33,635.93
96	Wolfe Island East and West Road.....	20.0	3,679.46	66,064.45	69,743.91
97	Hickson-Freelton.....	43.1	106,786.50	131,303.05	238,089.55
98	Windsor-Elenheim.....	58.7	105,169.10	105,385.32	210,554.42
99	Dundas-Hwy. No. 24.....	16.5	15,691.28	56,712.28	72,403.56
100	Thamesford-Hwy. No. 7.....	16.0	10,386.08	82,781.56	93,167.64
101	Warren Lake-Quebec Boundary.....	117.3	673,906.12	234,443.91	908,350.03

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
102	Jct. Hwy. No. 2-Dundas.....	2.2	\$ 242.24	\$ 22,951.22	\$ 23,193.46
103	Waubashene-Footes Bay.....	30.8	1,968,313.91	35,178.27	2,003,492.18
104	Hwy. No. 9-Grand Valley.....	1.8	712.97	4,153.14	4,866.11
105	Hwy. No. 17-Red Lake.....	111.9	217,656.70	219,073.26	436,729.96
106	Welcome-Dale.....	2.7	161.46	6,955.48	7,116.94
107	Ruthven-Hwy. No. 18.....	1.0	974.03	1,136.99	2,111.02
108	Hwy. No. 17-Quirke Lake.....	26.1	1,049,469.36	30,431.60	1,079,900.96
110	Hwy. No. 15-Hwy. No. 29.....	1.8	40.00	3,596.49	3,636.49
112	Hwy. No. 11-Hwy. No. 66.....	12.6	904,828.38	14,979.71	919,808.09
114	Hwy. No. 98-Hwy. No. 3.....	1.2	293.10	1,451.25	1,744.35
115	Hwy. No. 35-Hwy. No. 28.....	16.7	123,427.15	19,766.43	143,193.58
116	Patricia-Hudson.....	10.0		21,563.19	21,563.19
118	Glen Orchard-Dorset.....	53.3	160,323.62	141,029.39	301,353.01
119	Hwy. No. 17-Richan.....	13.9	12,389.27	36,830.77	49,220.04
120	Hwy. No. 17-Atikokan.....	87.7	977,293.30	159,110.63	1,136,403.93
121	Hwy. No. 35-Tory Hill.....	67.3	174,633.25	113,778.05	288,411.30
122	Hwy. No. 2-Queen Elizabeth Way.....	3.7	Cr. 213,986.47	25,693.98	Cr. 188,292.49
123	Eastern Entrance to St. Thomas.....	1.0	5.75		5.75
124	Parry Sound-Sundridge.....	52.4	263,040.16	130,974.62	394,014.78
125	Hwy. No. 105-Red Lake Airport.....	7.2	150,673.46	14,707.09	165,380.55
127	Maynooth-Whitney.....	27.5	226,858.32	69,110.50	295,968.82
128	Kenora-Redditt.....	18.9	32,666.93	52,799.32	85,466.25
129	Thessalon-Chapleau.....	149.2	642,376.02	227,665.02	870,041.04
130	Hwy. No. 61-Port Arthur.....	20.3	44,627.33	46,470.86	91,098.19
132	Hwy. No. 41-Renfrew.....	19.5	11,491.85	32,067.97	43,559.82
133	Hwy. No. 28-Hwy. No. 7.....	5.4	97,930.16	28,995.32	126,925.48
135	Hwy. No. 2-Hwy. No. 401.....	3.8	6,348.90	6,486.05	12,834.95
400	Hwy. No. 401-Hwy. No. 11.....	53.2	717,873.66	451,419.93	1,169,293.59
401	Windsor-Tilbury; Hwy. 4- Eastwood; Hwy. 27-New- castle; Kingston By Pass; Gananoque-Hwy. No. 2.....	168.3	20,552,671.78	1,099,742.43	21,652,414.21
402	Hwy. No. 7-Bluewater Bridge Queen Elizabeth Way.....	3.8 97.3	200,227.81 13,320,234.08	10,267.57 777,247.46	210,495.38 14,097,481.54
Secondary Roads					
500	Bobcaygeon-Kinmount- Bancroft-Hermon.....		425,252.64	195,789.96	621,042.60
501	Port Severn-Honey Harbour.....			17,425.64	17,425.64
502	Napanee-Marysville.....		4,002.34	54,867.32	58,869.66
503	Kirkfield-Sebright- Norland-Kinmount.....		122,468.29	126,469.84	248,938.13
504	Apsley-Chandos Lake Loop.....		10,387.96	80,040.41	90,428.37
505	Uphill Southerly-Hwy. No. 46			17,829.19	17,829.19
506	Plevna Westerly-Hwy. No. 41			55,718.65	55,718.65
507	Hwy. No. 36-Rockcroft- Gooderham.....			44,421.57	44,421.57
508	Burnstown-Calabogie- Black Donald.....			50,828.84	50,828.84
509	Clarendon Southerly- Hwy. No. 7.....			24,505.58	24,505.58
510	Magnetawan-Hwy. No. 124.....			2,638.11	2,638.11
511	Calabogie-White-Brightside.....			50,691.26	50,691.26
512	Eganville-Lake Clear-Cormac			18,722.05	18,722.05
513	Dacre-Hyndford.....			20,421.23	20,421.23
514	Hillside-Interlaken.....		5,795.91	16,436.87	22,232.78
515	Combermere-Quadville.....			37,735.79	37,735.79
516	Utterson-Windermere.....			46,172.81	46,172.81
517	Combermere-New Carlow.....		371.42	22,294.48	22,665.90
518	Ermsdale-Parry Sound.....		81,297.08	94,899.28	176,196.36
519	Hwy. No. 121-Haliburton- Redstone Lake.....		36,062.40	84,604.79	120,667.19

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
520	Burks Falls-Magnetawan- Dunchurch-Ardbeg.....	.....	\$ 6,241.54	\$ 68,133.69	\$ 74,375.23
521	Brudenell-Killaloe- Round Lake.....	.....		59,032.79	59,032.79
522	Trout Creek-Loring.....	.....	79,550.77	131,058.21	210,608.98
523	Madawaska-Cross Lake.....	.....		31,385.54	31,385.54
524	Road No. 522-Road No. 534...	.....		5,667.46	5,667.46
525	Gravenhurst-Muskoka Sanitarium Road.....	.....		2,121.51	2,121.51
526	Hwy. No. 69-Britt.....	.....		7,181.75	7,181.75
527	Huntsville-Baysville.....	.....	100.00	51,605.81	51,705.81
528	Hwy. No. 64-Wolseley Bay.....	.....	59.24	23,758.09	23,817.33
528A	Junction 528-Pine Cove.....	.....		7,990.69	7,990.69
529	Hwy. No. 69-Bayfield.....	.....		5,649.49	5,649.49
530	Carnarvon-West Guilford- Road No. 519.....	.....	913.99	39,337.05	40,251.04
531	Bonfield-Hwy. No. 17.....	.....		4,848.32	4,848.32
532	Falkenburg-Rosseau- Hayes Corners.....	.....	100,443.04	90,683.68	191,126.72
533	Mattawa-Harrington.....	.....	695.26	56,949.31	57,644.57
534	Powassan-Restoule.....	.....	217.30	102,498.71	102,716.01
535	Riviere Veuve-Hagar- Noelville.....	.....	25,108.61	90,502.74	115,611.35
536	Hwy. No. 17-Creighton Mine..	.....	50,545.64	5,241.05	55,786.69
537	Wanapitei-Wanup- Highway No. 69.....	.....	9,905.19	21,452.59	31,357.78
538	Algoma By-Pass.....	.....	25.67	3,833.48	3,859.15
539	Warren-River Valley-Field.....	.....	9,171.46	95,663.55	104,835.01
539A	Jct. 539-River Valley.....	.....		1,015.26	1,015.26
540	Little Current-Meldrum Bay..	.....	18,151.74	204,814.20	222,965.94
541	Hwy. No. 17-Falconbridge.....	.....		
542	Skead.....	.....	41,270.69	43,483.20	84,753.89
542	Tehkummah-Hwy. No. 68- Mindemoya-Gore Bay.....	.....		150,055.12	150,055.12
543	Hwy. No. 69-Long Lake.....	.....		10,434.66	10,434.66
544	Sudbury-Levack- Geneva Lake.....	.....	1,411,937.64	124,507.50	1,536,445.14
545	Bailey's Corners-Hanmer- Capreol-Milnet.....	.....	37,834.17	30,360.12	68,194.29
546	Iron Bridge-Mount Lake.....	.....	45.58	75,823.17	75,868.75
547	Sudbury-Frood.....	.....		1,764.21	1,764.21
548	St. Joseph's Island Road.....	.....	7,942.54	88,521.09	96,463.63
549	Whitefish-Lake Penage.....	.....	81,289.48	43,773.08	125,062.56
550	Hwy. No. 17-Gros Cap.....	.....	83.03	27,909.10	27,992.13
551	West Bay-Mindemoya and Providence Bay Northerly to Road No. 542.....	.....		49,076.61	49,076.61
552	Highway No. 17-Kars.....	.....	25.67	18,035.22	18,060.89
553	Massey-Sauble River Road.....	.....	25.67	52,698.13	52,723.80
554	Road No. 546-Road No. 559..	.....	14,920.34	17,923.00	32,843.34
555	Blind River-Lake Duborne.....	.....	25.67	12,274.59	12,300.26
556	Island Lake-Searchmount- Wabos.....	.....	43,130.53	53,634.58	96,765.11
557	Blind River-Lake Matinenda...	.....	117.24	20,332.29	20,449.53
558	Haileybury West- Montreal River.....	.....	21,490.60	42,986.66	64,477.26
560	Englehart-Elk Lake- Westree-Gogama.....	.....	28,647.35	274,249.72	302,897.07
561	Bruce Mines-Dunn Valley Road.....	.....	424.39	58,546.99	58,971.38
562	Thornloe-Hwy. No. 65.....	.....	1,979.38	13,404.84	15,384.22
563	Hwy. No. 17-Batchawana.....	.....	25.67	14,914.30	14,939.97
564	Hwy. No. 112-Boston Creek....	.....		13,172.19	13,172.19
565	Gros Cap Road (No. 550)- Pointe Aux Pins.....	.....	25.67	7,597.19	7,622.86
566	Matachewan-Ashley Mine.....	.....		18,112.86	18,112.86

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
567	Hwy. No. 11—Silver Centre.....	.....	\$ 2,973.15	\$ 60,176.08	\$ 63,149.23
568	Hwy. No. 11—Kenogami.....	.....	.....	1,867.93	1,867.93
569	Englehart—Hilliardton and South to Hwy. No. 11.....	.....	68.03	39,176.82	39,244.85
570	Hwy. No. 11—Sesekinika and East.....	.....	.....	2,797.24	2,797.24
571	Earlton—Road No. 562.....	.....	166.94	4,118.26	4,285.20
572	Ramore—Holtyre Mine.....	.....	144,910.28	9,000.37	153,910.65
573	Charlton North—Hwy. No. 11..	.....	.....	33,496.88	33,496.88
574	Cochrane—Norembega.....	.....	666.79	63,003.55	63,670.34
575	Hwy. No. 101—Night Hawk Lake.....	.....	.....	3,123.55	3,123.55
576	Timmins Westerly.....	.....	.....	2,236.32	2,236.32
577	Shillington—Iroquois Falls.....	.....	2,987.43	26,379.11	29,366.54
578	Iroquois Falls—Nellie Lake.....	.....	119.22	19,462.93	19,582.15
579	Cochrane—Gardiner.....	.....	.....	59,616.50	59,616.50
580	Beardmore—Leitch.....	.....	11.29	2,474.89	2,486.18
581	Moonbeam—Remi Lake.....	.....	.....	4,359.94	4,359.94
582	Hurkett Cut-off.....	.....	11.29	8,600.90	8,612.19
583	Lac Ste. Therese—Hearst— Mead.....	.....	104.77	87,890.54	87,995.31
584	Geraldton—Hardrock.....	.....	11.29	1,119.92	1,131.21
585	Nipigon—Pine Portage.....	.....	11.29	22,279.02	22,290.31
586	Shebandowan Lake—Hwy. No. 120.....	.....	1,405.00	3,011.58	4,416.58
587	Silver Islet—Hwy. No. 17.....	.....	9,374.44	36,027.67	45,402.11
588	Round Lake—Nolalu—Hwy. No. 17.....	.....	24,690.85	52,984.75	77,675.60
589	Dog Lake Road.....	.....	11.29	38,406.57	38,417.86
590	Nolalu—Kakabeka Falls— Hwy. No. 130.....	.....	11,062.76	50,866.92	61,929.68
591	Trout Lake Road.....	.....	11.29	10,541.88	10,553.17
592	Fort Frances—Rainy Lake.....	.....	.....	6,697.57	6,697.57
593	Devon Road.....	.....	.....	15,216.31	15,216.31
594	Dryden—Eagle River.....	.....	12,307.41	30,037.80	42,345.21
595	Hwy. No. 61—Road No. 588.....	.....	275.97	61,892.25	62,168.22
596	Keewatin—Pellatt— Highway No. 17.....	.....	374.80	24,569.30	24,944.10
597	Road No. 595—Road No. 608.....	.....	.....	8,299.21	8,299.21
598	Rabbitt Lake Road.....	.....	58.99	3,273.08	3,332.07
599	Savant Lake—Pickle Crow.....	.....	83,134.21	127,140.68	210,274.89
600	Black Hawk—Dearlock— North Branch.....	.....	.....	58,377.89	58,377.89
601	Dryden—Rice Lake Loop.....	.....	.....	24,450.16	24,450.16
602	Fort Frances—Big Fork—Emo... .....	.....	17,938.82	41,366.47	59,305.29
603	Borups Corners—Dymont.....	.....	.....	3,652.41	3,652.41
604	Kenora—East Melick Road.....	.....	.....	21,441.24	21,441.24
605	Eton—Rugby.....	.....	1,367.50	14,353.32	15,720.82
606	Hwy. No. 17—Markstay.....	.....	10,747.77	1,657.99	12,405.76
607	Bigwood—Hwy. No. 64.....	.....	565.68	23,751.00	24,316.68
607A	Hwy. 69—Hwy. 607.....	.....	10.78	946.22	957.00
608	Moose Hill—Road No. 595.....	.....	.....	18,079.31	18,079.31
609	Hwy. No. 105—Quibell— Clay Lake.....	.....	.....	12,329.70	12,329.70
610	Barber's Bay—Hoyle— Highway No. 101.....	.....	4,797.80	38,312.73	43,110.53
611	Crozier Road—North and South.....	.....	.....	17,633.02	17,633.02
613	Big Fork—Lake Despair.....	.....	1,811.37	42,267.49	44,078.86
614	Hemlo—Manitouwadge.....	.....	54,790.11	76,855.36	131,645.47
615	Clearwater Lake Road.....	.....	8,063.22	27,905.89	35,969.11
616	Hwy. No. 101 Southwesterly.....	.....	3,009.20	54,191.33	57,200.53
617	Stratton—North Branch.....	.....	2,622.46	23,631.29	26,253.75
618	Red Lake—Madsen.....	.....	.....	10,499.91	10,499.91
619	Pinewood—Minahico.....	.....	1,412.70	74,125.18	75,537.88
620	Hwy. No. 62—Glen Alda.....	.....	.....	29,625.20	29,625.20

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
621	Sleeman-Morson.....	.....	\$ 71,344.82	\$ 71,482.55	\$ 142,827.37
622	Atikokan-Caland Ore Mine.....	.....	33,033.85	8,740.98	41,774.83
623	Rainy River-Northerly to Lake of the Woods.....	.....	.....	25,507.77	25,507.77
624	Foleyet-Road 616.....	.....	394.95	.....	394.95
625	Hwy. No. 11-Caramat.....	.....	289.93	.....	289.93
	Ferries.....	.....	43,396.21	206,012.16	249,408.37
	Freeman-Wolfe Island.....	.....	1,044,713.24	.....	1,044,713.24
	Queensway, Toronto.....	.....	570,988.06	.....	570,988.06
	Bloor Street, Toronto.....	.....	1,083,369.54	.....	1,083,369.54
	Yonge Street, Toronto.....	.....	163,531.96	.....	163,531.96
	Dundas Street, Toronto.....	.....	31,266.05	.....	31,266.05
	Lakeshore Expressway, Toronto.....	.....	1,211,610.48	.....	1,211,610.48
	Queensway, Ottawa.....	.....	515,301.74	.....	515,301.74
	North Bay-Airport Road.....	.....	.....	9,426.73	9,426.73
	Pelee Island.....	.....	8,581.58	6,744.29	15,325.87
	Bicroft Mine Road.....	.....	134,137.85	5,447.51	139,585.36
	Kukatash-Palomar.....	.....	519.75	.....	519.75
	Hornepayne Access Road.....	.....	1,181.42	.....	1,181.42
	Pembroke-Allumette Island.....	.....	80,006.79	.....	80,006.79
	Heron Bay Access Road.....	.....	490,225.80	3,120.98	493,346.78
	Burwash-Killarney.....	.....	163,255.91	.....	163,255.91
	Hill's Island.....	.....	.....	3,231.82	3,231.82
	Geraldton Cut-off Hwy. 11- Road 584.....	.....	.....	4,357.01	4,357.01
	Geraldton North.....	.....	.....	2,190.99	2,190.99
	Miscellaneous Surveys.....	.....	302,685.31	.....	302,685.31
	.....	.....	\$116,478,983.76	\$29,848,595.11	\$146,327,578.87

	CONSTRUCTION	MAINTENANCE	TOTAL
Expenditures Allocated by Roads as above.	\$116,478,984	\$ 29,848,595	\$146,327,579
Additional Expenditures not include above:			
Sidewalks.....	27,025	.....	27,025
Connecting Links.....	882,429	290,786	1,173,215
Development Roads.....	5,553,307	299,056	5,852,363
Unincorporated Townships.....	401,917	598,364	1,000,281
Sundry undistributed District Office Administrative, Engineering, Building, and Inventory Charges.....	1,769,310	3,501,360	5,270,670
Total Expenditures Incurred by or Allocated to District Offices.....	\$125,112,972	\$ 34,538,161	\$159,651,133

APPENDIX No. 3

**SCHEDULE OF REVERSIONS OF SECTIONS OF THE
KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL
YEAR ENDING MARCH 31, 1958**

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Carleton.....	P-1591-38.	Nepean.....	Feb. 20, 1958	16	0.590
Carleton.....	P-2149-15.	Osgoode.....	Sept. 30, 1957	31	0.720
Cochrane.....	P-2335-12.	Tisdale.....	Sept. 23, 1957	101	2.270
Cochrane.....	P-2134-27.	Whitney.....	Sept. 23, 1957	101	1.170
Dufferin.....	P-3025-9.	Mono.....	Aug. 8, 1957	9	0.340
Elgin.....	P-2092-1.	Aldborough.....	Dec. 5, 1957	77	4.360
Elgin.....	A-7-45.	Dunwich.....	Apr. 15, 1957	3	0.050
Elgin.....	P-2240-5.	Dunwich.....	Dec. 6, 1957	75	2.700
Elgin.....	A-7-46.	Yarmouth.....	Apr. 15, 1957	123	1.160
Essex.....	P-2080-7.	Anderdon.....	July 3, 1957	18	0.046
Essex.....	P-3024-15.	Tilbury West.....	Sept. 23, 1957	401	0.250
Haldimand.....	P-2797-6.	Seneca.....	Oct. 18, 1957	6	0.020
Hastings.....	P-3181-6.	McClure.....	July 11, 1957	127	1.000
Huron.....	P-2802-2.	Turnberry.....	Aug. 8, 1957	87	0.190
Huron.....	P-2766-18.	Turnberry and Morris.....	Sept. 6, 1957	86	1.000
Huron.....	P-2851-8.	Wawanosh East.....	Sept. 6, 1957	86	0.590
Kent.....	P-1619-21.	Camden and Zone.....	Oct. 17, 1957	21	0.032
Leeds.....	A-20-64.	Elmsley South.....	Apr. 26, 1957	15	0.660
Leeds.....	P-1553-23.	Elmsley South.....	Aug. 22, 1957	15	1.360
Lennox and Addington.....	A-21-33.	Adolphustown and North Fredericksburgh.....	Apr. 19, 1957	41	2.750
Lennox and Addington.....	P-2069-29.	Ernestown.....	Nov. 29, 1957	33	0.450
Lincoln.....	P-1799-21.	Gainsborough.....	July 5, 1957	20	0.056
Lincoln.....	P-2141-92.	Grantham.....	Jan. 20, 1958	Q.E.W.	0.219
Middlesex.....	P-2719-7.	Westminster.....	Sept. 30, 1957	4	0.114
Muskoka.....	P-3115-9.	Freeman.....	July 25, 1957	103	0.200
Muskoka.....	P-2215-24.	Macaulay.....	Aug. 9, 1957	11	4.770
Muskoka.....	P-2125-49.	Medora.....	Aug. 20, 1957	69	0.200
Muskoka.....	P-2121-16.	Stephenson.....	Aug. 12, 1957	11	2.950
Nipissing.....	P-2261-26.	Springer.....	Aug. 19, 1957	17	0.380
Ontario.....	A-26-38.	Brock.....	Apr. 15, 1957	7	0.230
Ontario.....	A-26-61A.	Thorah.....	Apr. 23, 1957	12	0.300
Parry Sound.....	P-2127-20.	Armour.....	Mar. 5, 1956	11	0.260
Parry Sound.....	P-2127-22.	Armour.....	Amending Oct. 17, 1957	11	1.430
Parry Sound.....	P-2394-29.	Perry.....	Sept. 27, 1957	11	9.700
Peel.....	P-2199-13.	Albion.....	July 29, 1957	9	0.660
Peel.....	P-2354-8.	Caledon.....	Aug. 8, 1957	9	0.590
Prescott.....	A-31-21.	Hawkesbury West.....	Feb. 24, 1955	17	0.920
Prescott.....	P-1768-22.	Longueuil.....	Sept. 2, 1957	17	3.580
Renfrew.....	P-2201-28.	Algona North.....	July 5, 1957	60	0.057
Renfrew.....	P-2201-30.	Algona North.....	Aug. 8, 1957	60	1.000
Renfrew.....	P-2617-15.	Sherwood.....	Sept. 16, 1957	60	0.300
Simcoe.....	P-1856-23.	Orillia South.....	Aug. 19, 1957	11	0.660
Stormont.....	A-36-18.	Cornwall.....	Apr. 15, 1957	2	2.560
Stormont.....	A-36-19.	Cornwall.....	Apr. 15, 1957	2	6.000
Stormont.....	A-36-20.	Cornwall.....	Apr. 15, 1957	2	2.530
Sudbury.....	P-2711-14.	Waters.....	Nov. 8, 1957	536	0.430

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Thunder Bay.....	A-52-18.....	Blake.....	Mar. 11, 1957	61	0.740
Thunder Bay.....	A-52-31.....	Paipooonge.....	Dec. 17, 1953 Amending	61	.....
Victoria.....	P-2921-5.....	Laxton.....	Aug. 22, 1957	35	0.420
Victoria.....	P-2031-30.....	Ops.....	July 8, 1957	35	0.040
Waterloo.....	P-2882-5.....	Dumfries North.....	Oct. 7, 1957	97	8.400
Waterloo.....	P-1417-37.....	Waterloo.....	Dec. 5, 1957	8	0.610
Waterloo.....	P-1979-17.....	Woolwich.....	Aug. 20, 1957	85	0.130
Welland.....	P-1910-15.....	Pelham.....	July 5, 1957	20	0.220
Welland.....	P-1915-76.....	Stamford.....	Sept. 12, 1957	Q.E.W.	0.210
Wentworth.....	P-1930-12.....	Flamborough West.....	July 22, 1957	5	0.820
Wentworth.....	A-41-91.....	Glanford.....	Apr. 26, 1957	6	0.940
York.....	A-42-115.....	Etobicoke.....	Aug. 15, 1957	27	0.150
York.....	P-1960-94.....	Etobicoke.....	Aug. 8, 1957	Q.E.W.	0.300
York.....	A-42-120.....	King.....	Apr. 30, 1957	400	0.190
York.....	A-42-121.....	Scarborough.....	July 5, 1957	2	0.460
York.....	P-2106-5.....	Vaughan.....	Sept. 4, 1957	49	0.090
York.....	A-42-119.....	North York.....	Apr. 26, 1957	401	0.019
York.....	P-2770-331.....	North York.....	Dec. 6, 1957	401	0.280
York.....	P-2770-339.....	North York.....	Dec. 9, 1957	401	0.023
TOTAL PLANS.....		65	TOTAL MILEAGE.....		75.846

EDITOR'S NOTE: The Highway Improvement Act, 1957, which came into effect on April 3rd, 1957, made certain procedural changes with respect to the assumption of highways by the Department and the designation of such highways as a portion of The King's Highway. Under the new legislation, the assumption of a highway may be separate and distinct from its designation as a portion of The King's Highway and therefore, the necessity for including a schedule of assumptions of sections of The King's Highway System as in previous years is no longer necessary.

APPENDIX No. 3A

SCHEDULE OF CONTROLLED-ACCESS HIGHWAYS

April 1, 1957 to March 31, 1958

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MIILEAGE	CONSOLIDATED REGULATIONS 1950 NUMBER
3	St. Thomas By-pass.....	84/58	.....	.....
	Southwold Twp.....		1.26	.....
	Yarmouth Twp.....		1.0	.....
7	Breslau Diversion.....	100/57	.....	.....
	Waterloo Twp.....		1.06	.....
	Lindsay By-pass.....	101/57	.....	.....
	Ops Twp.....		7.03	.....
11	Callander By-pass.....	98/57	.....	.....
	N. Himsworth Twp.....		2.84	.....
	Holland Landing Diversion.....	52/58	.....	.....
	Gwillimbury East Twp.....		2.56	.....
	King Twp.....		0.18	.....
	North Bay By-pass.....			.....
	Widdifield Twp.....	141/57	1.18	.....
	West Ferris Twp.....	9/58	0.27	.....
15	Seeley's Bay By-pass.....	232/57	.....	.....
	Leeds Twp.....		1.53	.....
17	Black River Crossing.....	156/57	.....	.....
	Pic Twp.....		0.40	.....
	Ottawa By-pass.....	83/58	.....	.....
	Gloucester Twp.....		4.33	.....
	Pembroke By-pass.....	25/58	.....	.....
	Petawawa Twp.....		0.58	.....
	Pembroke Diversion.....	99/57	.....	.....
	Alice Twp.....		1.77	.....
	Thessalon By-pass.....	47/58	.....	.....
	Thessalon Twp. and Town of Thessalon.....		3.50	.....
35	Dorset By-pass.....	190/57	.....	.....
	Sherborne Twp.....		1.19	.....
	Ridout Twp.....		0.93	.....
43	Chesterville By-pass.....	276/57	.....	.....
	Winchester Twp. and Village of Chesterville.....		2.61	.....
66	Lebel Township Diversion.....	78/58	2.82	.....
103	Waubashene to MacTier.....	241/57	.....	.....
	Baxter Twp.....		9.66	.....
	Gibson Twp.....		9.90	.....
	Freeman Twp.....		4.74	.....
	Medora Twp.....		0.60	.....
108	The Elliot Lake Road.....	82/58	.....	.....
	Spragge and Lewis Twps.		4.82	.....
	Esten Twp.....		1.21	.....
	Procter Twp.....		5.69	.....
	Township 143.....		0.40	.....
	Township 149.....		9.33	.....
	Township 150.....		4.48	.....
115	Newcastle to Peterborough.....	194/57	.....	.....
	North Monaghan Twp.....		3.89	.....
122	The Middle Road.....	203/57	.....	.....
	Toronto Twp.....		1.27	.....
	Trafalgar Twp.....		1.79	.....
401	Toronto to Hespeler.....	62/58	.....	.....
	Etobicoke Twp.....		0.57	.....
	Toronto Twp.....		11.14	.....
	Trafalgar Twp.....		6.30	.....
	Esquesing Twp.....		3.28	.....
	Nassagaweya Twp.....		6.37	.....

Hwy. No.		DESIGNATED BY ONTARIO REGULATION	MILEAGE	CONSOLIDATED REGULATIONS 1950
		NUMBER		NUMBER
403	Puslinch Twp.....		13.02	
	Waterloo Twp.....		2.44	
	Freeman to Wolfe Island.....	8/58		
	Nelson Twp.....		2.61	
	East Flamborough Twp.....		3.40	
South Orillia By-pass	South Orillia By-pass.....	23/58		
	Orillia Twp. (S. Div.) and			
	Town of Orillia.....		3.27	
INTERCHANGE				
27	Brown's Line.....	76/58		
	Rexdale Blvd. — Etobicoke Twp.....			
401 & 27	Toronto to Hespeler.....	62/58		
	Etobicoke Twp.....			
401 & 29	Windsor to Quebec Boundary.....	204/57		
	Elizabethtown Twp.....		0.36	
401 & 38	Cataraqui Diversion.....	289/57		
	Kingston Twp.....		0.82	
401	Toronto to Oshawa.....	290/57		134 Item 3
	Scarborough/Pickering Townline —			
	Scarborough Twp. and			
	Pickering Twp.....			
	Windsor to Quebec Boundary.....	164/57		
Q.E.W.	Mill Street — Village of Newcastle.....			
	Kerr Street — Trafalgar Twp.....	79/58		
	and Town of Oakville			
	Shook's Hill — Toronto Twp.....	77/58		
	Mississauga Rd. — Toronto Twp.....			
	Highway 25 — Nelson Twp.....			
TOTAL MILEAGE AS OF MARCH 31, 1958.....				1001.11
TOTAL MILEAGE DESIGNATED DURING FISCAL YEAR ENDING MARCH 31, 1958.....				148.40

APPENDIX No. 3B

**SCHEDULE OF DESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY
AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR
ENDING MARCH 31, 1958**

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-3333-1	Esten.....	Dec. 19/57	108	1.210
Algoma.....	P-2400-19	Gladstone.....	Jan. 30/58	17	6.669
Algoma.....	P-2133-18	Indian Reserves Algoma.....	Sept. 11/57	17	2.760
Algoma.....	P-2237-6	Laird.....	Nov. 21/57	17	6.810
Algoma.....	P-2131-14	Long.....	Oct. 24/57	17	6.360
Algoma.....	P-3239-1	One, Forty-three.....	Dec. 30/57	108	0.440
Algoma.....	P-3236-9	One, Forty-nine.....	Jan. 23/58	108	9.330
Algoma.....	P-3343-1	One, Fifty.....	Dec. 30/57	108	4.480
Algoma.....	P-3233-2	Proctor.....	Dec. 30/57	108	5.690
Algoma.....	P-2930-4	Spragge.....	Aug. 21/57	17	6.250
Algoma.....	P-3283-1	Spragge and Lewis.....	Dec. 30/57	108	4.650
Algoma.....	P-2361-26	Striker.....	Oct. 10/57	17	4.600
Algoma.....	P-2249-14	Tarbutt Additional.....	Jan. 16/58	17	4.950
Algoma.....	P-2253-35	Thessalon.....	Nov. 14/57	17	3.250
Algoma.....	P-3328-1	Thirty, Range 20.....	Nov. 28/57	17	6.320
Algoma.....	P-3238-3	Thirty, Range 24.....	Sept. 18/57	17	6.700
Algoma.....	P-3244-5	Thirty, Range 25.....	Oct. 10/57	17	2.220
Algoma.....	P-3243-4	Thirty, Range 26.....	Oct. 17/57	17	6.500
Algoma.....	P-3224-1	Twenty-six, Range 23.....	Nov. 14/57	17	4.010
Brant.....	P-1997-47	Brantford.....	Oct. 24/57	2	5.300
Carleton.....	P-1591-36	Nepean.....	Oct. 17/57	16	6.620
Carleton.....	P-3017-49	Gloucester.....	Mar. 13/58	17	5.500
Carleton.....	P-3017-50	Gloucester.....	Mar. 20/58	17	Interchange
Carleton.....	P-3017-51	Gloucester.....	Mar. 20/58	17	Interchange
Cochrane.....	P-2474-46	Clute.....	Oct. 17/57	11	8.900
Cochrane.....	P-2864-15	Fournier.....	Oct. 10/57	11	.....
Cochrane.....	P-2879-21	Kendrey.....	Oct. 17/57	11	0.960
Cochrane.....	P-2897-3	Ottaway.....	Oct. 3/57	11	3.181
Cochrane.....	P-2335-11	Tisdale.....	Aug. 21/57	101	1.366
Cochrane.....	P-2134-29	Whitney.....	Mar. 20/58	101	1.400
Dufferin.....	P-3025-8	Mono.....	July 4/57	9	.....
Dundas.....	P-3151-17	Matilda.....	Mar. 20/58	401	Interchange
Dundas.....	P-3135-12	Williamsburgh.....	Jan. 30/58	401	Interchange
Dundas.....	P-2451-14	Winchester.....	Nov. 6/57	43	2.610
Durham.....	P-1680-19	Darlington.....	Oct. 17/57	2	1.330
Durham.....	P-1680-20	Darlington.....	Dec. 5/57	2	5.450
Durham.....	P-3103-41	Hope.....	Dec. 5/57	401	0.400
Durham.....	P-3103-44	Hope.....	Jan. 30/58	401	Interchange
Elgin.....	P-3161-17	Aldborough.....	Jan. 9/58	401	Interchange
Elgin.....	P-3161-18	Aldborough.....	Dec. 30/57	401	Interchange
Elgin.....	P-3161-19	Aldborough.....	Jan. 9/58	401	Interchange
Elgin.....	P-1917-30	Bayham.....	Feb. 20/58	19	13.208
Elgin.....	P-3160-15	Dunwich.....	Dec. 30/57	401	Interchange
Elgin.....	P-3160-16	Dunwich.....	Dec. 12/57	401	Interchange
Elgin.....	P-3160-17	Dunwich.....	Jan. 9/58	401	Interchange
Elgin.....	P-3159-21	Southwold.....	Dec. 19/58	401	Interchange
Elgin.....	P-3159-22	Southwold.....	Dec. 30/58	401	Interchange
Elgin.....	P-1783-34	Yarmouth.....	Feb. 6/58	4	8.090
Essex.....	P-2956-25	Maidstone.....	Dec. 30/57	401	Interchange
Essex.....	P-2956-26	Maidstone.....	Dec. 20/57	401	Interchange
Essex.....	P-3020-20	Rochester.....	Jan. 9/58	401	Interchange
Essex.....	P-2959-51	Sandwich S.....	Nov. 6/57	401	Interchange
Essex.....	P-2959-53	Sandwich S.....	Jan. 9/58	401	Interchange

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
Frontenac.....	P-3036-53.....	Kingston.....	Nov. 28/57	401	Interchange
Frontenac.....	P-3036-54.....	Kingston.....	Nov. 6/57	401	Interchange
Frontenac.....	P-3036-55.....	Kingston.....	Nov. 6/57	401	Interchange
Frontenac.....	P-3036-56.....	Kingston.....	Nov. 6/57	401	Interchange
Frontenac.....	P-3069-47.....	Pittsburgh.....	Feb. 27/58	401	Interchange
Glengarry.....	P-3126-13.....	Charlottenburgh.....	Feb. 27/58	401	Interchange
Glengarry.....	P-3126-15.....	Charlottenburgh.....	Mar. 20/58	401	Interchange
Glengarry.....	P-3050-21.....	Lancaster.....	Feb. 6/58	2	8.440
Grenville.....	P-2818-44.....	Augusta.....	Jan. 9/58	401	Interchange
Grenville.....	P-2818-46.....	Augusta.....	Feb. 20/58	401	Interchange
Grey.....	P-1961-21.....	Artemesia.....	Nov. 14/57	10	5.600
Grey.....	P-1969-17.....	Holland and Sullivan.....	Oct. 3/57	6	0.650
Grey.....	P-1969-18.....	Holland and Sullivan.....	Nov. 21/57	6	9.590
Haldimand.....	P-2748-24.....	Seneca.....	Nov. 14/57	54	4.520
Haldimand.....	P-2797-5.....	Seneca.....	Oct. 3/57	6	2.600
Haliburton.....	P-3341-3.....	Cardiff.....	Mar. 20/59	109	1.650
Halton.....	P-3171-18.....	Esquesing.....	Dec. 5/57	401	Interchange
Halton.....	P-3171-4.....	Esquesing.....	Mar. 18/58	401	3.280
Halton.....	P-3172-6.....	Nassagaweya.....	Mar. 18/57	401	6.370
Halton.....	P-3172-24.....	Nassagaweya.....	Jan. 30/58	401	Interchange
Halton.....	P-2070-94.....	Nelson.....	Jan. 23/58	Q.E.W.	Interchange
Halton.....	P-1738-7.....	Trafalgar.....	Jan. 23/58	25	1.210
Halton.....	P-1938-98.....	Trafalgar.....	Dec. 5/57	Q.E.W.	Interchange
Halton.....	P-3114-20.....	Trafalgar.....	July 25/57	122	1.790
Halton.....	P-3170-6.....	Trafalgar.....	Mar. 19/58	401	6.300
Halton.....	P-3170-18.....	Trafalgar.....	Jan. 9/58	401	Interchange
Hastings.....	P-3262-2.....	Faraday.....	Mar. 20/58	109	2.040
Hastings.....	P-3060-29.....	Sidney.....	Mar. 20/58	401	Interchange
Hastings.....	P-3044-37.....	ThurLOW.....	Dec. 5/57	401	Interchange
Huron.....	P-2224-20.....	Ashfield.....	Jan. 16/58	21	6.848
Huron.....	P-1830-10.....	Turnberry.....	Nov. 21/57	4	4.460
Kenora.....	P-2522-12.....	Boys.....	Nov. 21/57	17	1.200
Kenora.....	P-3202-3.....	Burk.....	Nov. 21/57	17	0.680
Kenora.....	P-2499-3.....	Forgie.....	Nov. 14/57	17	0.870
Kent.....	P-3167-13.....	Harwich.....	Dec. 19/57	401	Interchange
Kent.....	P-3167-14.....	Harwich.....	Feb. 6/58	401	Interchange
Kent.....	P-3168-12.....	Howard.....	Nov. 14/57	401	Interchange
Kent.....	P-3168-13.....	Howard.....	Dec. 19/57	401	Interchange
Kent.....	P-3130-8.....	Orford.....	Dec. 19/57	3	6.470
Kent.....	P-3166-11.....	Raleigh.....	Feb. 6/58	401	Interchange
Lanark.....	P-1796-19.....	Beckwith.....	Feb. 27/58	15	2.120
Lanark.....	P-2007-29.....	Drummond.....	Jan. 30/58	15	0.820
Lanark.....	P-2817-8.....	Ramsay.....	Feb. 27/58	15	Interchange
Leeds.....	P-3095-74.....	Elizabethtown.....	Dec. 30/57	401	Interchange
Leeds.....	P-3095-80.....	Elizabethtown.....	Mar. 20/58	401	Interchange
Leeds.....	P-1931-6.....	Leeds.....	Aug. 8/57	15	1.520
Leeds.....	P-2140-33.....	Leeds.....	Feb. 27/58	401	Interchange
Lennox and Addington.....	P-3173-55.....	Ernestown.....	Feb. 6/58	401	Interchange
Lennox and Addington.....	P-2036-4.....	Richmond.....	Nov. 28/57	2	4.730
Lennox and Addington.....	P-2860-13.....	Richmond.....	Nov. 28/57	41	8.700
Lennox and Addington.....	P-3175-32.....	Richmond.....	Dec. 5/57	401	Interchange
Lennox and Addington.....	P-3175-36.....	Richmond.....	Mar. 20/58	401	Interchange

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Middlesex	P-2177-12	Caradoc	June 12/57	81	0.190
Middlesex	P-3163-4	Deleware	Jan. 30/58	401	Interchange
Middlesex	P-3047-51	Dorchester N.	Oct. 30/57	401	Interchange
Middlesex	P-3047-52	Dorchester N.	Dec. 5/57	401	Interchange
Middlesex	P-3047-53	Dorchester N.	Dec. 5/57	401	Interchange
Middlesex	P-3047-54	Dorchester N.	Nov. 28/57	401	Interchange
Middlesex	P-1421-27	London	Nov. 6/57	4	0.620
Middlesex	P-3053-68	Westminster	Nov. 6/57	401	Interchange
Middlesex	P-3053-70	Westminster	Dec. 5/57	401	Interchange
Middlesex	P-3053-71	Westminster	Dec. 5/57	401	Interchange
Middlesex	P-3053-72	Westminster	Dec. 19/57	401	Interchange
Muskoka	P-3121-28	Baxter	Aug. 8/57	103	9.600
Muskoka	P-3299-	Draper	July 25/57	532	0.300
Muskoka	P-3115-10	Freeman	Aug. 8/57	103	4.740
Muskoka	P-3104-16	Gibson	Aug. 8/57	103	9.900
Muskoka	P-3305	Medora	Aug. 8/57	103	0.600
Muskoka	P-3300	Monck and Macaulay	July 25/57	532	3.090
Muskoka	P-3301	Muskoka	July 25/57	532	3.180
Nipissing	P-2108-30	Papineau	Jan. 30/58	17	3.130
Nipissing	P-2136-36	Ferris West	Nov. 14/57	11	0.270
Nipissing	P-2261-28	Springer	Sept. 14/57	17	2.300
Northumberland	P-3073-36	Murray	Dec. 12/57	401	Interchange
Northumberland	P-3080-35	Hamilton	Feb. 27/58	401	Interchange
Northumberland	P-3177-32	Cramahe	Feb. 27/58	401	Interchange
Northumberland	P-3179-34	Haldimand	Jan. 30/58	401	Interchange
Northumberland	P-3176-18	Brighton	Dec. 5/57	401	Interchange
Ontario	P-1521-34	Reach	Nov. 21/57	12	6.370
Ontario	P-2310-61	Pickering	Feb. 25/58	401	Interchange
Oxford	P-2081-16	Oxford East	Nov. 28/57	2	1.330
Oxford	P-2384-7	Oxford East	Jan. 16/58	53	4.798
Oxford	P-3046-34	Oxford East	Oct. 30/57	401	Interchange
Oxford	P-3046-35	Oxford East	Nov. 28/57	401	Interchange
Oxford	P-3046-36	Oxford East	Nov. 28/57	401	Interchange
Oxford	P-3046-38	Oxford East	Dec. 5/57	401	Interchange
Oxford	P-3035-31	Oxford West	Dec. 5/57	401	Interchange
Oxford	P-3079-13	Blandford	Oct. 30/57	401	Interchange
Parry Sound	P-2127-23	Armour	Oct. 3/57	11	1.590
Parry Sound	P-2394-28	Perry	July 25/57	11	4.120
Peel	P-1857-143	Toronto	Aug. 8/57	Q.E.W.	0.440
Peel	P-1857-148	Toronto	Dec. 5/57	Q.E.W.	Interchange
Peel	P-2199-12	Albion	July 4/57	9	1.040
Peel	P-2354-7	Caledon	July 4/57	9	0.360
Peel	P-3106-2	Toronto	July 25/57	122	1.270
Peel	P-3108-22	Toronto	Mar. 18/58	401	11.14
Peel	P-3108-45	Toronto	Jan. 9/58	401	Interchange
Peterborough	P-1955-34	Smith	June 12/57	28	0.640
Peterborough	P-2356-24	Burleigh	Dec. 5/57	28	0.660
Peterborough & Durham	P-3329-1	Monaghan N. Cavan	Jan. 23/58	133	1.230
Peterborough & Durham	P-2954-21	Monaghan N. Cavan	Jan. 23/58	28	1.600
Rainy River	P-2320-10	Dilke	Nov. 28/57	71	6.920
Rainy River	P-3148-5	Schwenger	Jan. 30/58	622	5.260
Renfrew	P-2588-29	Petawawa	Sept. 4/57	17	13.500
Renfrew	P-2588-33	Petawawa	Nov. 14/57	17	0.580
Renfrew	P-2617-14	Sherwood	Sept. 4/57	60	2.270
Renfrew	P-2656-5	Algoma North	Oct. 10/57	41	0.750
Renfrew	P-2998-5	Alice	Apr. 30/57	17	1.770

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Simcoe.....	P-2082-16	Medonte.....	Nov. 28/57	12	8.930
Simcoe.....	P-2082-17	Medonte.....	Nov. 28/57	12	0.789
Simcoe.....	P-1920-38	Tay.....	Dec. 30/57	12	2.910
Simcoe.....	P-1920-39	Tay.....	Jan. 9/58	12	8.259
Simcoe.....	P-1834-16	Tiny & Tay.....	Mar. 13/58	27	0.410
Simcoe.....	P-2203-6	Orillia South & Oro.....	Dec. 5/57	12	3.180
Simcoe.....	P-3075-15	Orillia South.....	Nov. 14/57	Orillia- Atherley Road	3.270
Stormont.....	P-3146-7	Osnabruck.....	Feb. 27/58	401	Interchange
Stormont.....	P-3147-12	Cornwall.....	Feb. 20/58	401	Interchange
Sudbury.....	P-2132-20	Garson.....	Jan. 30/58	541	1.060
Sudbury.....	P-2132-21	Garson.....	Jan. 23/58	541	0.650
Sudbury.....	P-3229-1	Thirty-five.....	Oct. 17/57	129	1.760
Thunder Bay.....	P-2763-12	Pardee.....	Mar. 20/58	61	1.690
Thunder Bay.....	P-2461-53	Nipigon.....	Nov. 14/57	17	3.150
Thunder Bay.....	P-2560-11	Stirling.....	Oct. 3/57	17	3.690
Thunder Bay.....	P-2581-18	McTavish.....	Oct. 17/57	17	12.500
Thunder Bay.....	P-2821-51	MacGregor.....	Feb. 20/58	17	19.820
Thunder Bay.....	P-2914-19	Pic.....	July 2/57	17	0.400
Thunder Bay.....	P-2958-8	Lyon.....	Sept. 11/57	17	6.500
Thunder Bay.....	P-2986-29	Dorion.....	Oct. 17/57	17	7.590
Thunder Bay.....	P-3133-6	Seventy & Bryant.....	Nov. 14/57	17	0.043
Thunder Bay.....	P-3274-1	Seventy-three.....	Feb. 20/58	614	0.490
Thunder Bay.....	P-3281-1	Gertrude.....	Feb. 27/58	614	0.910
Thunder Bay.....	P-3296-1	Foote.....	Feb. 27/58	614	4.990
Timiskaming.....	P-2160-30	Armstrong.....	Nov. 6/57	11	6.500
Timiskaming.....	P-2236-18	Dymond.....	Feb. 20/58	11	3.140
Timiskaming.....	P-2264-14	Teck.....	Jan. 23/58	112	1.970
Timiskaming.....	P-2265-22	Otto.....	Jan. 30/58	112	4.330
Timiskaming.....	P-2266-8	Boston.....	Jan. 23/58	112	2.650
Timiskaming.....	P-2545-9	Teck.....	Oct. 3/57	66	2.160
Timiskaming.....	P-2545-10	Teck.....	Nov. 21/57	66	0.310
Timiskaming.....	P-3152-1	Otto.....	Dec. 5/57	66	1.300
Timiskaming.....	P-3292-3	Pacaud & Marquis.....	Feb. 6/58	112	3.480
Timiskaming.....	P-3154-3	Eby.....	Nov. 14/57	66	2.460
Timiskaming.....	P-3348	Lebel.....	Jan. 23/58	66	2.820
Victoria.....	P-2098-24	Ops & Fenelon.....	Jan. 23/58	36	7.760
Waterloo.....	P-3092-13	Waterloo.....	Mar. 18/58	401	2.440
Waterloo.....	P-3092-27	Waterloo.....	Nov. 21/57	401	Interchange
Waterloo.....	P-3092-29	Waterloo.....	Jan. 30/58	401	Interchange
Waterloo.....	P-3092-30	Waterloo.....	Mar. 20/58	401	Interchange
Welland.....	P-1746-4	Wainfleet.....	Nov. 14/57	3A	4.740
Welland.....	P-2084-14	Wainfleet.....	Nov. 21/57	57	5.910
Wellington.....	P-2077-35	Arthur.....	Dec. 19/57	9	13.090
Wellington.....	P-3156-10	Puslinch.....	Mar. 18/58	401	13.020
Wellington.....	P-3156-51	Puslinch.....	Jan. 9/58	401	Interchange
Wellington.....	P-3156-52	Puslinch.....	Jan. 9/58	401	Interchange
Wellington.....	P-3156-54	Puslinch.....	Jan. 30/58	401	Interchange
Wentworth.....	P-2113-143	Saltfleet.....	Mar. 20/58	Q.E.W.	Interchange
York.....	P-1980-21	King.....	Dec. 19/57	11	0.180
York.....	P-1980-22	Willimbury East.....	Dec. 19/57	11	2.560
York.....	P-2083-69	Etobicoke.....	Mar. 25/58	27	Interchange
York.....	P-2948-33	Etobicoke.....	Mar. 18/58	401	0.570
York.....	P-2948-69	Etobicoke.....	Mar. 20/58	401	& Interchange
York.....	P-2920-89	Scarborough.....	Feb. 25/58	401	Interchange
TOTAL PLANS.....		216	TOTAL MILEAGE.....		524.335

APPENDIX No. 4

BRIDGES COMPLETED DURING 1957

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Amikoungami River Br.	Concrete beam and slab (prestressed)	1 @ 67'-0"	Hwy. 66 Matachewan to Quebec Bdry.	Teck			Timiskaming	14
Ashton C.P.R. Overhead	Steel rigid frame	1 @ 72'-6 $\frac{3}{16}$ "	Hwy. 15 Ottawa-Carleton Place	Goulbourn	2	X	Carleton	9
Augusta Twp. Br. 9 (Edward St. Underpass)	Concrete box girder	1 @ 121'-10 $\frac{1}{16}$ "	Hwy. 401 Kingston By-pass	Augusta	2 and 3	I	Grenville	8
Aux Sable River Br.	Continuous steel beam.....	64'-7 $\frac{1}{2}$ "/82'-3" 64'-7 $\frac{1}{2}$ "	Hwy. 81 Hwy. 22 to Parkhill	Williams E. and W.	1 and 2	ECR and WCR	Middlesex	2
Bass Creek Br.	Timber trestle	5 @ 16'-0"	Hwy. 11 Kapuskasing-Moonbeam	O'Brien	9	X	Cochrane	16
Bass Creek Br.	Concrete barrel arch	1 @ 30'-0"	Hwy. 68 Little Current-Ten Mile Point	Sheguiandah	1	B	Manitoulin	17
Beatty Saugeen River Br.	Concrete barrel arch	1 @ 45'-0"	Hwy. 6 Port Dover-Tobemory	Normanby	16	IW	Grey	5
Beatty Saugeen Tail Race Br.	Concrete barrel arch	1 @ 30'-0"	Hwy. 6 Port Dover-Tobemory	Normanby	16	IW	Grey	5
Beaver Creek Br.	Continuous steel beam	36'-0"/48'-0" 36'-0"	Hwy. 17 T.C.H. English River-Manitoba Bdry.	Sanford	6 and 7	I and II	Kenora	20
Big Creek Br.	Timber trestle	5 @ 16'-0"	Long Point Road	Walsingham	14	B	Norfolk	2
Birch Creek Br. (Gough Creek)	Steel beam	30'/30'/46' 69'/56'	Hwy. 17 T.C.H. Sault Ste. Marie-Sudbury	Hallam	9	V	Sudbury	18
Black Creek Br.	Concrete rigid frame	1 @ 30'-0"	Hwy. 6 Caledonia-Ryckman Cor.	Seneca	5	Range I	Haldimand	4
Black River Br.	Continuous steel girders	2 @ 77'-3"	Hwy. 69 Beaverton-Washago	Rama	1 and 15	G and V	Ontario	6
Black River Br.	Steel beam — timber trestle approaches — composite timber and concrete deck	3 @ 20'/1 @ 56' 3 @ 20'	Sec. Rd. 572 Raymore Hwy. 11	Hislop	5	I and II	Cochrane	14

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Brale Creek Br.	Timber trestle	5 @ 16'-0"	Sec. Rd. 574 Cochrane-Norembega	Glackmeyer	11	I	Cochrane	16
Bueller Creek Br.	Timber trestle Composite timber and concrete deck	4 @ 20'-0"	Hwy. 105 Vermilion Bay- Red Lake	Wabigoon	2 and 3	IV	Kenora	20
Cainsville T.H. & B. Rlwy. Overhead	Concrete rigid frame (tunnel type)	1 @ 21'-0"	Hwy. 2 at Cainsville	Brantford	Farley	Tract	Brant	4
Cawthra Rd. Underpass	Concrete rigid frame girder (precast centre section)	1 @ 98'-0"	Q.E.W. at Cawthra Rd.	Toronto	10 and 11	I SDS	Peel	6
Colbourne St. Overpass	Steel plate girder	1 @ 62'-0"	Hwy. 402 Sarnia-Perch Ck.	Sarnia	21 and 22	VII	Lambton	1
Credit River Br.	Concrete rigid frame	1 @ 37'-0"	Hwy. 10 Brampton-Orangeville	Caledon	28	IE-IW	Peel	6
Dixon Road Underpass	Concrete beam and slab (prestressed)	1 @ 114'-6"	Hwy. 27 north of Hwy. 401	Etobicoke	21 and 22	II and III	York	6
Elizabethtown Twp. Br. 15 (N. Augusta Rd. Underpass)	Concrete rigid frame box girder	1 @ 122'-6"	Hwy. 401 and 2 Kingston By-pass	Elizabethtown	8 and 9	I and II	Leeds	8
Esqueving Twp. Br. 3 (C.N.R. Overhead)	Concrete rigid frame	1 @ 46'-0"	Hwy. 401 Toronto By-pass-West	Esqueving	2	III	Halton	6
Etobicoke Twp. Br. 9 (Underpass)	Concrete rigid frame box girder	1 @ 115'-9"	Hwy. 401 Toronto By-pass-West	Etobicoke	17	III	York	6
Etobicoke Twp. Br. 101C Toronto By-pass (Overpass)	Concrete rigid frame	1 @ 46'-6"	Hwy. 401 Toronto By-pass at Hwy. 27	Etobicoke	18	III	York	6
Etobicoke Twp. Br. 101D Toronto By-pass (Overpass)	Concrete rigid frame girder	1 @ 87'-6"	Hwy. 401 Toronto By-Pass at Hwy. 27	Etobicoke			York	6
Etobicoke Twp. Br. 101E Toronto By-pass (Mimico Ck.)	Concrete barrel arch	1 @ 45'-0"	Hwy. 401 Toronto By-pass at Hwy. 27	Etobicoke	18	II	York	6
Etobicoke Twp. Br. 101F Toronto By-pass (Mimico Ck.)	Concrete barrel arch	1 @ 45'-0"	Hwy. 401 Toronto By-pass at Hwy. 27	Etobicoke	18	II	York	6
Etobicoke Twp. Br. 101G Toronto By-pass (Mimico Ck.)	Concrete barrel arch	1 @ 45'-0"	Hwy. 401 Toronto By-pass at Hwy. 27	Etobicoke	19	II-III	York	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
French River Br.	Steel through truss	1 @ 320'-0" 1 @ 70'-0"	Hwy. 69 at French River T.C.H.	Bigwood and Is. 3464			Sudbury and Parry Sound	17
Furnace Falls Br. (Burnt River)	Continuous concrete girders	44'-1 1/2"/65'-0" 44'-1'	Sec. Rd. 500 Kimnour-Irondale	Snowdon	18	I	Haliburton	11
Gibson River Br.	Continuous concrete slab	38'-3"/48'-0" 38'-3"	Hwy. 103 T.C.H. Port Severn- Footes Bay	Gibson	20	V	Muskoka	11
Humber River Br. (Lakeshore Expressway)	Steel beam	2 @ 131'8 3/4" and 2 @ 71'-2 1/2"	Toronto Lakeshore Expressway	York and Etobicoke			York	6
Huntsville North C.N.R. Overhead	Continuous steel girder	65'-0"/86'-0" 65'-0"	Hwy. 11 Huntsville-Novar	Chaffey	12	III	Muskoka	11
Hoople Creek Br.	Continuous concrete slab (haunched)	38'-0"/50'-0" 38'-0"	Hwy. 2 Iroquois-Cornwall	Osnabruck	10	I	Stormont	9
Kingston Twp. Br. 15 (Sydenham R.d. Underpass)	Concrete rigid frame hollow girder	1 @ 110'-11 3/4"	Hwy. 401 Kingston By-pass	Kingston	15 and 16	III	Frontenac	8
Kimnour Br. (Burnt River)	Steel through truss	1 @ 128'-3"	Hwy. 121 at Kimnour	Somerville	I	XIII	Victoria	7
Lakeshore Expressway (Westbound Overpass at T.T.C.)	Concrete rigid frame	1 @ 30'-0"	Toronto Lakeshore Expressway	Etobicoke			York	6
Lakeshore Expressway (Westbound Overpass at Ramp "A")	Steel beam	56'-0"/80' + 53'-0"	Toronto Lakeshore Expressway	Etobicoke			York	6
Leeds and Lansdowne Twp. Br. 6 (Overpass)	Steel beam	1 @ 60'-2 1/2"	Hwy. 401 Kingston By-pass at Hwy. 2	Leeds and Landsdowne	17 and 18	I	Leeds	8
Lynn River Br.	Steel beam extension to existing steel plate girder	1 @ 45'-0"	Hwy. 3 Town of Simcoe	Woodhouse			Norfolk	4
Mad River Br. (Singhampton Br.)	Concrete rigid frame	1 @ 50'-0"	Hwy. 24 Port Dover- Collingwood	Osprey and Nottawasaga	9 17	A XII	Grey and Simcoe	5
Maitland River Br. (Harrison's Br.)	Steel rigid frame	1 @ 82'-0"	Hwy. 87 Wingham-Harriston	Minto	27	VIII	Wellington	3
Mallet River Br.	Concrete rigid frame girder	1 @ 60'-0"	Hwy. 9 Kincardine-Arthur	Maryborough and Arthur	25 6	XV XI	Wellington	3

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Mattawasaga River Br.	Steel beam — timber trestle	13'-3" / 16'-0" 13'-6" / 37'-0" 13'-6" / 16'-0" 13'-3"	Hwy. 101 Warren Lake Quebec Bury.	Marriott	950' E. of Holloway Marriott Line		Cochrane	14
Milnet Br. (Vermilion River)	Timber truss	1 @ 28'-0"	Sec. Rd. 545 Capreol-Milnet	Hutton	1	II	Sudbury	17
Mississauga Rd. Overpass	Concrete rigid frame girder	1 @ 70'-2"	O.E.W. Toronto-Hamilton	Toronto	8	Range II	Peel	6
Moir Lake Br.	Continuous (haunched) slab with concrete girders in mid centre span	38'-9" / 67'-6" 38'-9"	Dev. Rd. 274 Foxboro-Madoc	Huntingdon	10	XIII	Hastings	8
Morrisburg C.N.R. Overhead	Steel beam	1 @ 70'-7"	Hwy. 31 Ottawa-Morrisburg	Williamsburgh	30	I	Dundas	
Murdock River Br.	Concrete barrel arch	1 @ 40'-0"	Hwy. 64 Alban-Rutter Rd.	Delamere	8	I	Sudbury	13
Nelson Twp. Br. F.W. 2 (C.N.R. Overhead)	Concrete rigid frame	1 @ 58'-0"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	17	II	Halton	4
Nelson Twp. Br. F.W. 3 (C.N.R. Overhead)	Concrete rigid frame	1 @ 58'-0"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	17	B	Halton	4
Nelson Twp. Br. F.W. 4 (Brant St. Overpass)	Concrete rigid frame	1 @ 58'-6"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	7 and 18	Brant's Block	Halton	4
Nelson Twp. Br. F.W. 5	Concrete rigid frame	33'-6" / 56'-0" 33'-6"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	14	Brant's Block	Halton	4
Nelson Twp. Br. F.W. 6	Concrete rigid frame	33'-6" / 56'-0" 33'-6"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	14	Brant's Block	Halton	4
Nelson Twp. Br. F.W. 7	Concrete rigid frame	33'-6" / 56'-0" 33'-6"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	14	Brant's Block	Halton	4
Nelson Twp. Br. F.W. 8 (Freeman Interchange)	Concrete rigid frame	1 @ 78'-1 1/4"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	13	Brant's Block	Halton	4
Nelson Twp. Br. F.W. 9 (C.N.R. Overhead)	Continuous steel plate girder	62'-0" / 80'-0" 62'-0"	Hwy. 403 Freeman Corners-Wolfe Island	Nelson	13 and 14	Brant's Block	Halton	4

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Nelson Twp. Br. F.W. 10 (Freenan Interchange)	Concrete rigid frame	1 @ 39'-0"	Hwy. 403 Freenan Corners- Wolfe Island	Nelson	13	Brant's Block	Halton	4
Nelson Twp. Underpass	Concrete box girder (prestressed)	1 @ 121'-0"	Q.E.W. Jctn. Hwy. 25	Nelson	15 and 16	II and III SDS	Halton	4
Ops. Twp. C.N.R. Overhead	Concrete rigid frame (tunnel type)	1 @ 36'-0"	Hwy. 7 Penlon-Lindsay	Ops	21	III	Victoria	7
Ops Twp. C.P.R. Overhead	Concrete rigid frame	1 @ 40'-2 3/4"	Hwy. 7 T.C.H. Lindsay By-pass	Ops	16	VI	Victoria	7
Orillia Twp. C.P.R. Overhead	Concrete rigid frame (extension)	35'-0"/49'-0" 35'-0"	Hwy. 11 Orillia-Washago	Orillia South	2	VI	Simcoe	11
Oxford E. Twp. C.N.R. (overhead)	Continuous concrete slab	48'-11 1/2"/78'- 6 1/2"/76'-6 1/2"	Hwy 2 Eastwood-Creditville	Oxford East	3	I	Oxford	2
Oxford E. Twp. Br. 3 (Tower Line Rd. Underpass)	Concrete rigid frame girder	1 @ 102'-0"	Hwy. 401 London By-pass	Oxford East	12	I	Oxford	2
Oxford W. Twp. Br. 13 (Culloden Rd. Underpass)	Concrete rigid frame girder	1 @ 118'-8 1/4"	Hwy. 401 London By-pass	Oxford West	23	III	Oxford	2
Pine River Br.	Concrete rigid frame	1 @ 60'-11 1/8"	Hwy. 21 Grand Bend- Kincardine	Huron	35	V	Bruce and Huron	3
Pine River Br.	Timber trestle (Laminated timber deck)	13'-3"/16'-0" 13'-3"	Sec. Rd. 535	Cherriman	I	III	Sudbury	13
Pittsburgh Twp. Br. 1 (Cataraqui River)	Continuous steel plate girder	96'-0"-112'-0" 96'-0"	Hwy. 401 Kingston By-pass	Pittsburgh	West Boundary	Boundary	Frontenac	8
Pontypool C.P.R. Overhead	Concrete rigid frame	1 @ 53'-10 1/8"	Hwy. 35 Jctn. Hwys. 2 and 115 and Jctn. Hwys 115 and 28	Manvers	10	II	Durham	7
Pulse Creek Br. (Extension)	Concrete rigid frame	1 @ 40'-0"	Hwy. 7 Warwick-Sarnia	Sarnia	5	VI and VII	Lambton	1
Richview Br. Extension (West Branch Humber R.)	Concrete barrel arch	1 @ 45'-0"	Hwy. 27 at Hwy. 401	Etobicoke	19	II and III	York	6
Sandwich S. Twp. Br. 8 and 9 (New York Central and Pere Marquette Railway Overhead)	Steel plate girder— (2 concrete girder wedge spans)	10 spans	Hwy. 401 Tilbury Windsor	Sandwich South	13	VI	Essex	1

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Savant Lake Pickle Crow Br. (Mile 15½)	Timber crib	1 @ 26'-0"	Sec. Rd. 509 Savant Lake—Pickle Crow	Unsurveyed			Thunder Bay	19
Severn River Br. and Washago	Concrete rigid frame	2 @ 25'-0"	Hwy. 69 at Washago	Orillia and Rama			Simcoe and Ontario	6
Severn River East Branch Br.	Steel low truss	1 @ 110'-0"	Hwy. 69 Beaverton—Washago	Rama	27	L	Ontario	6
Shekak River Br.	Steel beam	5 @ 55'-0"	Hwy. 11 Hearst—Longlac	Gill	18	V	Cochrane	16
Shelter Valley Creek Br.	Concrete rigid frame	1 @ 52'-0"	Hwy. 2 Toronto—Montreal	Haldimand	18	A	Northumberland	7
Sidney Twp. Br. 3 (Sidney St. Underpass)	Concrete rigid frame box girder	1 @ 110'-8½"	Hwy. 401 Kingston By-pass	Sidney	A	XI	Hastings	8
Siston's Corners C.N.R. Overhead	Concrete beam slab (precast)	37'-9"/39'-0" 37'-9"	Hwy. 17 T.C.H. Fort William—Kenora	Dawson Rd. Lots	31	A and B	Thunder Bay	19
Springbrook Creek Br.	Concrete rigid frame	1 @ 40'-0"	Hwy. 7 Guelph—Elginfield	Waterloo	107	G.C.T.	Waterloo	3
Sturgeon River Br.	Steel beam—timber piers and bents, composite timber and concrete deck	19'-6"/19'-6" 46'-0"/19'-6" 20'-0"/20'-0" 19'-6"	Hwy. 71 Fort Francis—Rainy River	Shenston	Sec. 2		Rainy River	20
Swamp River Br.	Timber trestle	12'-5" 4 @ 16'-0" 12'-5"	Hwy. 120 Shabakwa—Atikokan	Conacher			Thunder Bay	19
Sydenham River Br.	Steel through truss	1 @ 150'-0"	Hwy. 79 Jctn. Hwy. 2 Jctn. Hwy. 7	Brooke and Ephemia	16 35	I VIII	Lambton	1
Sydenham River Br. at Poplar Hill	Concrete beam and slab (prestressed)	1 @ 80'-0"	Hwy. 22 London—Sarnia	Lobo	5	VIII	Middlesex	2
Tilbury W. Twp. Br. 2 (Comber Rd. Underpass)	Composite steel and concrete rigid frame	1 @ 108'-1½"	Hwy. 401 Tilbury—Windsor	Tilbury West	6 and 7	V and VI	Essex	1
Toronto Twp. Br. 3 (Etobicoke Creek)	Concrete slab	1 @ 96'-0"	Hwy. 401 Hwy. 27—Hwy. 10	Toronto	3	IV-E	Peel	6
Toronto Twp. Br. 5	Composite steel and concrete rigid frame	1 @ 110'-0"	Hwy. 401 Hwy. 27—Hwy. 10	Toronto	4	III-E and IV-E	Peel	6
Toronto Twp. Br. 7	Composite steel and concrete rigid frame	1 @ 96'-0"	Hwy. 401 Hwy. 27—Hwy. 10	Toronto	5	II-E and III-E	Peel	6

NAME	TYPE	SPAN	ROAD	TWONSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Toronto Twp. Br. 8	Composite steel and concrete rigid frame	1 @ 96'-0"	Hwy. 401 Hwy. 27-Hwy. 10	Toronto	5	I-E and II-E	Peel	6
Toronto Twp. Br. 10	Composite steel and concrete rigid frame	1 @ 110'-0"	Hwy. 401 and 10 Hwy. 27-Hwy. 10	Toronto	6	I	Peel	6
Tyendinaga Twp. Br. 3 (Shannonville C.P.R. Overhead)	Concrete rigid frame girder (precast centre section)	1 @ 77'-9"	Hwy. 401 Kingston By-pass	Tyendinaga	10 and 11	I	Hastings	8
Union Creek Br.	Concrete rigid frame	1 @ 45'-0"	Hwy. 121 Fenelon Falls-Kinmount	Somerville	6	VI and VII	Victoria	7
Vermillion River Br. (Svenk's Br.)	Steel through truss	1 @ 200'-0"	Sec. Rd. 549 Hwy. 17-Lake Penage	Louise	3	IV	Sudbury	17
Wasi River Br. (Wistawasing River)	Concrete rigid frame	1 @ 75'-0"	Hwy. 11 Powassan-North Bay	N. Himsworth	4	XXIV	Parry Sound	13
Waubashene C.N.R. Overhead	Continuous concrete slab	62'-6" / 90'-0"	Hwy. 103 T.C.H. at Waubashene	Tay	9	XI	Simcoe	11
Whirl Creek Br.	Concrete rigid frame girder	1 @ 80'-0"	Hwy. 8 Galt-Goderich	Logan and Fullerton	4 and 14	I	Perth	3
Williamsburg Twp. Br. 4 (Hoasic Creek)	Concrete rigid frame girder	1 @ 36'-0"	Hwy. 401 (E.B. lane) Irquois-Aultsville	Williamsburg	23	I	Dundas	9
Wye River Br.	Steel beam and slab	1 @ 40'-0"	Hwy. 6 at Elmvale	Flos	6	VIII and IX	Simcoe	6

APPENDIX No. 5

COUNTIES

Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
TOTALS TO DATE.....		\$358,251,522.25	\$182,501,809.40

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1957

Provincial Subsidies on 1957 Expenditures being paid in the 1957-58 Fiscal Year

COUNTY	YEAR OF ESTABLISHMENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURE TO END OF 1957	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB-URBAN ROADS	TOTAL		
Brant.....	1917	89.50	35.00	124.50	\$ 5,912,060.86	\$ 3,116,758.43
Bruce.....	1917	303.16	.....	303.16	8,659,326.86	4,489,217.76
Carleton.....	1910	132.25	106.10	238.35	16,484,048.20	8,416,312.86
Dufferin.....	1918	170.33	.....	170.33	3,788,010.57	1,890,272.58
Elgin.....	1917	269.58	19.80	289.38	8,227,349.09	4,184,109.78
Essex.....	1916	205.93	42.00	247.93	13,049,508.25	6,741,006.27
Frontenac.....	1907	121.90	43.60	165.50	4,097,360.21	2,037,896.30
Grey.....	1918	295.22	35.00	330.22	9,732,698.19	4,936,498.95
Haldimand.....	1912	163.64	.....	163.64	7,812,420.52	3,926,694.63
Halton.....	1907	146.90	.....	146.90	5,946,982.38	2,953,455.38
Hastings.....	1904	262.09	6.20	268.29	7,174,508.44	3,519,343.07
Huron.....	1917	390.80	.....	390.80	9,442,050.86	5,012,573.55
Kent.....	1917	372.32	11.46	383.78	15,030,093.58	7,920,807.08
Lambton.....	1918	225.68	22.06	247.74	8,424,551.65	4,297,262.38
Lanark.....	1903	222.65	6.00	228.65	6,054,512.25	3,065,087.34
Leeds and Grenville....	1910	143.70	30.70	174.40	8,348,620.53	4,075,811.32
Lennox and Addington	1906	346.68	.....	346.68	5,551,895.43	2,847,570.01
Lincoln.....	1904	169.09	23.89	192.98	9,143,594.26	4,455,709.62
Middlesex.....	1906	450.35	64.25	514.60	15,775,063.27	8,122,001.24
Norfolk.....	1917	240.33	.....	240.33	9,344,942.61	4,746,289.04
Northumberland and Durham.....	1918	286.95	12.75	299.70	8,439,097.66	4,332,239.66
Ontario.....	1918	234.69	24.60	259.29	7,142,146.98	3,644,422.32
Oxford.....	1904	199.67	15.48	215.15	8,590,747.04	4,256,092.62
Peel.....	1907	151.65	.....	151.65	9,655,923.92	4,933,942.17
Perth.....	1907	181.10	23.55	204.65	6,254,650.90	3,186,619.40
Peterborough.....	1919	130.30	70.00	200.30	4,839,897.91	2,590,604.38
Prescott and Russell	1917	336.53	.....	336.53	10,381,142.21	5,151,417.63
Prince Edward.....	1907	187.83	.....	187.83	5,025,894.98	2,480,094.49
Renfrew.....	1918	217.92	.....	217.92	8,980,685.98	4,631,214.40
Simcoe.....	1903	262.80	.....	262.80	10,492,270.55	5,244,343.89
Stormont, Dundas and Glengarry.....	1917	398.60	61.00	459.60	12,707,834.11	6,401,811.03
Victoria.....	1917	228.70	.....	228.70	6,008,669.47	3,106,443.68
Waterloo.....	1908	134.20	87.00	221.20	10,789,712.25	5,590,105.92
Welland.....	1912	134.63	34.50	169.13	12,150,666.54	6,168,803.85
Wellington.....	1903	353.05	38.50	391.55	12,752,474.53	6,688,895.15
Wentworth.....	1903	80.38	105.13	185.51	11,838,002.27	5,888,777.26
York.....	1911	.....	182.33	182.33	34,202,106.94	17,451,303.96
TOTALS.....	.....	8,241.10	1,100.90	9,342.00	\$358,251,522.25	\$182,501,809.40

APPENDIX

SUMMARY OF COUNTY

(Government Subsidies Paid)

NAME OF COUNTY	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 167,085.04	\$ 89,499.80	\$ 122,136.73	\$ 6,244.74
Bruce.....	252,771.69	121,177.35	68,604.37	2,361.66
Carleton.....	733,583.13	204,979.78	309,600.01	6,063.21
Dufferin.....	108,328.41	126,773.41	16,996.26	729.77
Elgin.....	189,714.80	253,665.15	34,286.54	23,655.77
Essex.....	539,657.51	281,926.25	165,362.67	19,090.16
Frontenac.....	119,199.15	104,154.07	13,268.26	4,880.31
Grey.....	106,996.67	333,603.20	9,255.66	4,480.37
Haldimand.....	385,179.41	91,777.51	20,618.50	362.36
Halton.....	239,652.29	191,721.68	49,586.88	3,317.58
Hastings.....	108,957.17	168,418.85	14,539.15	4,645.77
Huron.....	242,605.48	192,527.34	182,859.06	22,412.87
Kent.....	545,238.40	189,092.17	103,524.58	29,349.91
Lambton.....	623,863.45	135,754.32	159,156.11	17,782.52
Lanark.....	109,739.63	123,543.53	17,078.05	11,903.80
Leeds and Grenville.....	139,270.26	226,463.92	3,645.36	7,046.85
Lennox and Addington.....	60,215.65	136,691.57	30,337.39	112.87
Lincoln.....	318,743.51	177,506.83	29,818.77	5,090.20
Middlesex.....	886,248.72	348,333.26	313,872.41	6,627.93
Norfolk.....	173,739.40	241,474.76	103,343.13	3,273.26
Northumberland and Durham.....	342,169.08	154,599.77	155,813.99	1,343.74
Ontario.....	314,385.00	216,288.63	45,740.69	7,375.68
Oxford.....	435,850.00	200,455.82	167,025.59	4,279.30
Peel.....	862,580.12	253,233.16	241,911.18	758.44
Perth.....	223,547.85	165,132.45	48,740.87	1,405.45
Peterborough.....	148,097.62	93,501.48	26,468.15	8,725.85
Prescott and Russell.....	240,805.99	161,179.73	86,857.34	15,503.95
Prince Edward.....	168,999.48	120,006.60	6,764.14	551.75
Renfrew.....	559,080.18	97,773.85	19,249.83	12,851.87
Simcoe.....	239,889.46	337,838.43	37,591.68	2,517.99
Stormont, Dundas and Glengarry.....	282,134.77	136,327.18	29,133.83	6,862.81
Victoria.....	157,880.89	148,043.06	18,193.04	5,594.93
Waterloo.....	251,739.53	350,647.68	135,179.58	7,142.12
Welland.....	499,357.20	209,294.01	234,670.63	17,192.78
Wellington.....	357,303.76	403,635.55	205,330.33	5,325.99
Wentworth.....	421,942.93	347,519.16	118,408.60	22,450.59
York.....	1,002,123.67	318,509.81	270,800.91	7,937.62
TOTALS.....	\$12,558,677.30	\$ 7,453,071.12	\$ 3,615,770.27	\$ 307,252.77

SUMMARY OF METROPOLITAN

Metropolitan Toronto.....	\$11,070,444.85	\$ 2,795,936.32	\$ 3,061,506.74	\$ 186,150.34
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No. 7

ROAD EXPENDITURES—1957

in the 1957-58 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	APPROVED EXPENDITURE			GOVERNMENT SUBSIDY 50% AND 80%
	CONSTRUCTION	MAINTENANCE	TOTAL	
\$ 16,109.90	\$ 289,221.77	\$ 111,854.44	\$ 401,076.21	\$ 239,052.55
46,025.99	321,376.06	169,565.00	490,941.06	266,760.34
53,714.39	1,043,183.14	264,757.38	1,307,940.52	748,669.23
16,621.09	125,324.67	144,124.27	269,448.94	140,042.28
17,303.05	224,001.34	294,623.97	518,625.31	276,695.35
13,257.30	705,020.18	314,273.71	1,019,293.89	564,982.79
16,394.90	132,467.41	125,429.28	257,896.69	134,392.91
77,170.29	116,252.33	415,253.86	531,506.19	269,873.91
2,983.77	405,797.91	95,123.64	500,921.55	256,755.04
25,237.74	289,239.17	220,277.00	509,516.17	270,629.41
27,215.75	123,496.32	200,280.37	323,776.69	167,643.82
72,559.79	425,464.54	287,500.00	712,964.54	418,063.85
8,285.80	648,762.98	226,727.88	875,490.86	477,607.78
8,734.46	783,019.56	162,271.30	945,290.86	525,727.02
23,738.05	126,817.68	159,185.38	286,003.06	151,696.09
22,595.30	142,915.62	256,106.07	399,021.69	202,718.50
12,198.39	90,553.04	149,002.83	239,555.87	128,913.02
17,872.30	348,562.28	200,469.33	549,031.61	284,988.50
58,952.86	1,200,121.13	413,914.05	1,614,035.18	903,167.69
29,102.65	277,082.53	273,850.67	550,933.20	307,451.52
50,209.20	497,983.07	206,152.71	704,135.78	399,215.21
38,052.27	360,125.69	261,716.58	621,842.27	326,856.05
30,469.00	602,875.59	235,204.12	838,079.71	470,431.32
40,841.27	1,104,491.30	294,832.87	1,399,324.17	772,462.96
15,749.17	272,288.72	182,287.07	454,575.79	242,331.78
27,458.63	174,565.77	129,685.96	304,251.73	162,684.07
48,326.08	327,663.33	225,009.76	552,673.09	307,044.94
9,441.65	175,763.62	130,000.00	305,763.62	155,076.58
26,781.69	578,330.01	137,407.41	715,737.42	367,499.22
64,991.54	277,481.14	405,347.96	682,829.10	353,447.45
59,903.24	311,268.60	203,093.23	514,361.83	267,979.90
29,941.57	176,073.93	183,579.56	359,653.49	186,963.14
45,145.95	386,919.11	402,935.75	789,854.86	437,623.94
57,556.33	734,027.83	284,043.12	1,018,070.95	584,594.50
99,469.75	562,634.09	508,431.29	1,071,065.38	598,729.59
58,770.76	540,351.53	428,740.51	969,092.04	526,803.78
106,560.77	1,272,924.58	433,008.20	1,705,932.78	936,587.95
\$1,375,742.64	\$16,174,447.57	\$9,136,066.53	\$25,310,514.10	\$13,832,163.98

ROAD EXPENDITURES — 1957

\$ 752,326.95	\$14,131,951.59	\$3,734,413.61	\$17,866,365.20	\$ 8,933,182.60
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APPENDIX No. 8**ORGANIZED TOWNSHIPS****Chronological Summary of Road Expenditure and Provincial Subsidy
Including Improvement Districts and Indian Reserves**

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
	TOTALS.....	\$352,367,616.72	\$181,963,351.68

NOTE. — 572 Townships, 23 Improvement Districts, 29 Indian Reserves are represented in the above expenditures for 1957.

APPENDIX No. 9**CITIES, TOWNS AND VILLAGES****Chronological Summary of Road Expenditure and Provincial Subsidy**

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
	TOTALS.....	\$175,360,058.08	\$ 68,998,649.77

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1957
ROADS UNDER LOCAL AUTHORITY

COUNTY	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT CONCRETE BRICK ETC.	TOTAL
Brant.....	1.00	47.48	62.72	23.02	22.71	16.16	173.09
Bruce.....	13.40	52.12	34.31	14.05	11.84	1.50	127.22
Carleton.....	43.34	102.67	38.30	109.30	173.35	.....	466.96
Dufferin.....	4.45	7.70	5.90	0.37	7.44	4.04	29.90
Elgin.....	7.90	15.99	15.40	28.21	23.35	3.35	94.20
Essex.....	44.75	79.26	38.69	28.99	149.75	162.20	503.64
Frontenac.....	0.82	.....	21.55	16.18	49.36	0.30	88.21
Grey.....	29.86	33.87	78.21	9.34	12.78	6.73	170.79
Haldimand.....	5.25	17.20	3.72	13.41	14.41	0.34	54.33
Halton.....	3.33	38.09	35.21	4.61	27.63	6.02	114.89
Hastings.....	8.10	12.60	48.80	1.60	11.21	0.13	82.44
Huron.....	2.96	27.35	30.28	36.82	12.21	5.68	115.30
Kent.....	2.49	15.74	41.35	13.56	59.74	24.65	157.53
Lambton.....	1.32	112.43	39.67	24.95	61.69	11.23	251.29
Lanark.....	11.72	16.94	13.10	26.47	30.85	1.00	100.08
Lennox-Addington..	.....	5.82	17.45	.....	3.10	.....	26.37
Leeds and Grenville	18.19	22.20	3.47	30.66	19.32	23.45	117.29
Lincoln.....	10.08	20.33	7.14	29.02	47.05	44.87	158.49
Middlesex.....	9.33	46.60	91.26	70.33	.....	6.60	224.12
Norfolk.....	3.78	15.26	29.97	17.25	3.40	3.20	72.86
Northumberland and Durham.....	2.80	64.08	54.40	20.10	48.02	5.80	195.20
Ontario.....	8.36	39.89	100.56	62.12	49.14	9.21	269.28
Oxford.....	7.92	25.47	35.20	49.27	12.32	11.52	141.70
Peel.....	0.76	27.34	4.66	21.78	17.78	0.48	72.80
Perth.....	17.15	55.30	14.33	19.88	36.77	2.84	146.27
Peterborough.....	0.50	24.95	55.14	7.77	27.54	4.20	120.10
Prescott and Russell	3.10	6.35	7.00	6.18	9.00	0.50	32.13
Prince Edward.....	.....	0.21	8.91	2.87	8.36	.....	20.35
Renfrew.....	13.11	26.17	24.95	7.15	43.15	0.15	114.68
Simcoe.....	30.63	114.25	67.27	11.48	42.67	11.24	277.54
Stormont, Dundas and Glengarry.....	4.15	54.15	8.30	31.10	28.15	18.20	144.05
Victoria.....	1.00	12.00	34.80	3.40	24.75	.....	75.95
Waterloo.....	27.23	17.33	93.02	101.52	124.03	23.30	386.43
Welland.....	4.75	24.14	32.12	83.75	74.96	9.43	229.15
Wellington.....	16.60	29.30	63.61	51.03	18.90	29.02	208.46
Wentworth.....	3.76	58.91	32.50	117.29	221.01	3.12	436.59
York.....	1.09	47.55	22.60	1.66	15.10	.....	88.00
TOTALS—Counties	364.98	1,317.04	1,315.87	1,096.49	1,542.84	450.46	6,087.68
Metro. Toronto Area	9.36	5.54	13.26	6.45	552.61	25.89	613.11
DISTRICTS							
Algoma.....	5.50	78.13	.....	5.32	37.10	5.10	131.15
Cochrane.....	1.99	24.52	21.00	28.33	17.18	1.80	94.82
Kenora.....	9.10	36.24	9.16	0.25	25.82	.....	80.57
Manitoulin.....	5.50	12.20	1.60	1.70	.....	.....	21.00
Muskoka.....	5.63	47.10	25.00	26.38	2.83	2.75	109.69
Nipissing.....	7.05	22.28	24.65	11.60	31.63	1.50	98.71
Parry Sound.....	.....	45.16	4.00	9.55	12.10	.....	70.81
Rainy River.....	5.56	29.07	10.29	2.62	1.60	1.67	50.81
Sudbury.....	5.85	36.90	67.73	22.94	31.55	1.00	165.97
Temiskaming.....	.....	30.25	9.50	13.25	13.35	.....	66.35
Thunder Bay.....	17.30	62.22	52.69	9.94	80.70	16.59	239.44
TOTALS—Districts	63.48	424.07	225.62	131.88	253.86	30.41	1,129.32
GRAND TOTALS...	437.82	1,746.65	1,554.75	1,234.82	2,349.31	506.76	7,830.11

APPENDIX

MILEAGE OF ROAD SURFACES

COUNTY	COUNTY ROADS				
	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE
Brant.....		25.00	5.50	94.00	.....
Bruce.....		155.57	.....	134.19	11.85
Carleton.....		62.85	27.40	38.13	109.97
Dufferin.....		157.20	.....	6.43	6.70
Elgin.....		126.30	.....	0.83	162.25
Essex.....		101.21	40.17	54.12	17.07
Frontenac.....		89.00	60.85	14.50	1.15
Grey.....		297.45	.....	25.45	2.00
Haldimand.....		64.20	89.31	.....	6.12
Halton.....		74.88	29.75	10.32	23.15
Hastings.....		179.17	48.75	16.35	21.72
Huron.....		226.30	.....	164.50	.....
Kent.....		105.75	.....	6.06	262.10
Lambton.....		137.29	.....	57.58	46.67
Lanark.....		153.60	6.10	65.30	3.65
Lennox and Addington.....		42.00	58.70	16.40	57.30
Leeds and Grenville.....		162.20	9.00	106.84	67.84
Lincoln.....		13.05	95.28	68.06	8.75
Middlesex.....		248.79	.....	210.57	18.55
Norfolk.....		17.22	.....	222.30	.....
Northumberland and Durham.....		193.55	2.05	63.90	39.60
Ontario.....		143.16	7.09	83.69	22.54
Oxford.....		109.00	.....	106.15	.....
Peel.....		78.19	26.18	9.95	32.85
Perth.....		144.35	.....	58.20	2.10
Peterborough.....		148.70	.....	45.80	5.80
Prescott and Russell.....	2.95	215.55	35.75	54.70	27.58
Prince Edward.....		92.53	33.87	45.48	7.35
Renfrew.....		70.91	.....	85.81	59.85
Simcoe.....		205.80	1.10	20.40	35.50
Stormont, Dundas and Glengarry.....		201.75	63.50	158.10	35.65
Victoria.....		129.40	.....	96.30	3.00
Waterloo.....		82.90	70.40	32.10	34.30
Welland.....		5.30	37.35	72.35	44.43
Wellington.....		198.80	100.30	74.65	17.80
Wentworth.....		1.25	80.61	102.55	1.10
York.....		37.87	25.27	69.75	48.94
TOTALS — Counties.....	2.95	4,498.04	954.28	2,491.81	1,245.23
Metropolitan Toronto Area.....	5.09	4.83	22.89	12.25	233.49
DISTRICTS					
Algoma.....					
Cochrane.....					
Haliburton.....					
Kenora.....					
Manitoulin.....					
Muskoka.....					
Nipissing.....					
Parry Sound.....					
Rainy River.....					
Sudbury.....					
Temiskaming.....					
Thunder Bay.....					
TOTALS — Districts.....					
Unorganized Townships.....					
GRAND TOTALS.....	8.04	4,502.87	977.17	2,504.06	1,478.72

No. 11

AT THE END OF 1957

ORGANIZED TOWNSHIP ROADS								
CEMENT, CON- CRETE	TOTAL	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	Mix. MAC. OR ASPHALTIC CONCRETE	CEMENT, CON- CRETE	TOTAL
.....	124.50	48.27	443.95	15.05	1.57	1.90	.....	510.74
1.55	303.16	81.00	1,398.00	318.75	11.50	12.00	.....	1,821.25
.....	238.35	172.05	865.85	11.00	5.90	28.10	.....	1,082.90
.....	170.33	60.50	641.50	85.00	.....	.....	.....	787.00
.....	289.38	4.94	866.09	13.00	.....	.....	.....	884.03
35.36	247.93	24.55	888.22	105.45	1.20	17.41	39.56	1,076.39
.....	165.50	334.60	606.50	7.70	7.70	2.30	.....	958.80
5.32	330.22	124.00	1,921.30	61.50	.....	.....	.....	2,106.80
4.01	163.64	80.00	471.38	24.25	21.40	5.00	.....	602.03
8.80	146.90	4.70	457.99	51.57	.....	8.50	2.50	525.26
2.30	268.29	319.00	1,185.50	8.50	3.00	1.68	.....	1,517.68
.....	390.80	74.25	1,502.25	2.75	14.95	7.40	1.00	1,602.60
9.87	383.78	52.78	1,218.39	.....	3.00	4.46	0.65	1,279.28
6.20	247.74	174.41	1,194.03	7.00	19.30	0.31	.....	1,395.05
.....	228.65	488.40	514.75	.....	3.70	.....	.....	1,006.85
.....	174.40	231.70	408.56	7.75	.50	.54	.....	649.05
.80	346.68	500.25	764.19	2.50	39.10	22.40	.....	1,328.44
7.84	192.98	94.94	429.93	42.90	27.55	5.24	4.12	604.68
36.69	514.60	67.94	1,577.47	65.84	5.97	.....	0.40	1,717.62
0.81	240.33	132.20	746.69	15.28	111.91	.....	.....	1,006.08
0.60	299.70	262.10	1,771.45	5.42	45.84	.....	.....	2,084.81
2.81	259.29	213.30	845.66	.....	9.60	6.76	.....	1,075.32
.....	215.15	.....	1,080.07	.....	11.73	.....	.....	1,091.80
4.48	151.65	63.18	542.83	104.02	.....	8.62	.....	718.65
.....	204.65	29.75	1,013.75	.....	.....	.25	.....	1,043.75
.....	200.30	151.00	782.90	16.00	.....	.....	.....	949.90
.....	336.53	559.65	472.50	0.10	.....	.....	.....	1,032.25
8.60	187.83	30.60	351.70	22.00	2.00	.....	.....	406.30
1.35	217.92	1,015.50	675.36	.....	2.00	2.30	.....	1,695.16
.....	262.80	269.28	1,849.82	4.05	1.80	30.95	.....	2,155.90
0.60	459.60	494.80	856.65	.....	5.40	4.25	.....	1,361.10
.....	228.70	167.30	744.10	.....	.....	.....	.....	911.40
1.50	221.20	6.75	576.75	1.25	8.25	.50	.25	593.75
9.70	169.13	351.77	404.36	140.53	22.81	30.93	2.10	952.50
.....	391.55	87.85	1,150.95	.....	1.80	.....	.50	1,241.10
.....	185.51	30.61	467.07	17.60	10.88	.....	.....	526.16
0.50	182.33	57.40	806.68	17.30	16.19	22.23	.....	919.80
149.69	9,342.00	6,861.32	32,495.14	1,174.06	416.55	224.03	51.08	41,222.18
ROADS								
10.77	289.32	115.66	160.10	482.03	96.13	573.66	8.13	1,435.71
.....	.....	174.85	572.45	.....	3.00	.....	.....	750.30
.....	.....	72.25	523.43	8.00	13.62	2.50	.....	619.80
.....	.....	192.35	247.95	.....	15.13	.....	.....	455.43
.....	.....	28.00	180.69	.....	.....	.....	.....	208.69
.....	.....	76.00	440.45	.....	0.50	.....	.....	516.95
.....	.....	337.35	483.80	.....	63.10	.....	.....	884.25
.....	.....	137.10	518.85	.....	8.80	.....	.....	664.75
.....	.....	82.30	904.50	.....	14.50	.....	.....	1,001.30
.....	.....	87.15	497.15	.....	0.90	.....	.....	585.20
.....	.....	113.25	609.73	6.50	24.80	10.40	.....	764.68
.....	.....	94.10	526.05	2.00	15.00	.....	.....	637.15
.....	.....	61.10	626.38	30.40	36.74	8.54	0.35	763.51
.....	.....	1,455.80	6,131.43	46.90	196.09	21.44	0.35	7,852.01
.....	.....	1,204.38	3,494.35	.....	4.00	.....	.....	4,702.73
160.46	9,631.32	9,637.16	42,281.02	1,702.99	712.77	819.13	59.56	55,212.63

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1957

Approved 1957 Expenditures by Cities, Towns, and Villages under Part VII of the Highway Improvement Act

MUNICIPAL ROAD DISTRICT No.	CITIES (29) SEP. TOWNS (8)	APPROVED EXPENDITURES — 1957			GOVERNMENT SUBSIDY 33⅓%, 50% AND 80%
		TOWNS (147)	VILLAGES (155)	URBAN TOTAL (339)	
1	\$ 1,278,552.69	\$ 383,698.93	\$ 162,339.39	\$ 1,824,591.01	\$ 714,053.72
2	880,331.70	240,643.38	85,145.25	1,206,120.33	462,125.43
3	1,535,201.77	386,114.71	87,280.95	2,008,597.43	763,304.59
4	3,586,969.08	637,397.92	133,253.12	4,357,620.12	1,612,206.42
5	100,427.78	235,309.69	77,366.03	413,103.50	211,222.31
6	1,434,821.41	1,434,821.41	312,164.44	1,746,985.85	918,445.10
6 M.T.A.	2,619,845.96	271,369.95	583,598.52	3,474,814.43	1,300,804.93
7	302,860.09	250,067.07	50,589.07	603,516.23	266,713.28
8	740,099.91	43,363.63	55,038.07	838,501.61	308,749.55
9	3,557,400.90	240,499.65	98,627.12	3,896,527.67	1,405,761.28
10	.....	239,009.79	67,197.98	306,207.77	162,941.69
11	.....	282,640.72	70,946.35	1,131,263.89	455,168.81
12	777,676.82	43,575.81	20,860.21	64,436.02	34,010.49
13	.....	107,912.58	20,867.00	283,604.21	117,205.41
14	154,824.63	192,357.25	733.02	193,090.27	98,892.78
16	.....	626,425.99	.....	626,425.99	315,286.76
17	503,294.03	183,454.48	.....	686,748.51	264,014.29
18	435,400.00	31,413.79	1,000.00	467,813.79	162,661.84
19	682,987.04	14,523.44	.....	697,510.48	235,168.76
20	.....	719,052.15	.....	719,052.15	379,301.04
TOTALS.....	\$17,155,872.40	\$ 6,563,652.34	\$ 1,827,006.52	\$25,546,531.26	\$10,188,038.48

NOTE. — One town did not apply for subsidy in 1957 (Nesterville).

APPENDIX No. 13

TYPES OF SURFACES ON THE KING'S HIGHWAYS

(As of December 31, 1957)

County or District	Concrete	Bituminous Pavement	Mulch	Gravel	Total
Algoma.....	29.41	97.60	133.57	40.39	300.97
Brant.....	19.66	53.34	9.03	.....	82.03
Bruce.....	10.04	109.92	22.15	30.76	172.87
Carleton.....	0.32	126.14	3.03	.....	129.49
Cochrane.....	1.59	186.37	102.93	112.90	403.79
Dufferin.....	20.50	44.73	.....	.....	65.23
Dundas.....	.....	57.97	6.73	0.62	65.32
Durham.....	.....	92.37	.....	23.36	115.73
Elgin.....	17.44	81.75	11.94	.....	111.13
Essex.....	56.84	130.18	18.92	.....	205.94
Frontenac.....	0.41	89.76	33.20	37.50	160.87
Glengarry.....	.....	58.53	0.40	.....	58.93
Grenville.....	.....	46.43	.....	.....	46.43
Grey.....	5.29	121.47	3.66	13.98	144.40
Haldimand.....	0.27	75.25	2.21	.....	77.73
Haliburton.....	.....	58.11	30.60	10.01	98.72
Halton.....	4.47	68.82	4.74	.....	78.03
Hastings.....	.....	112.97	98.67	7.26	218.90
Huron.....	8.29	176.98	12.14	6.53	203.94
Kenora.....	.....	165.51	32.25	288.18	485.94
Kent.....	24.04	151.95	.....	.....	175.99
Lambton.....	26.13	125.96	.....	2.90	154.99
Lanark.....	.....	87.19	.....	6.73	93.92
Leeds.....	11.59	146.98	6.73	6.65	171.95
Lennox and Addington.....	.....	66.91	59.99	.....	126.90
Lincoln.....	4.51	55.45	18.89	0.85	79.70
Manitoulin.....	.....	.....	17.50	38.35	55.85
Middlesex.....	16.42	183.09	5.85	17.78	223.14
Muskoka.....	.....	95.73	61.74	25.26	182.73
Nipissing.....	9.17	203.02	80.82	65.93	358.94
Norfolk.....	7.74	54.89	0.38	.....	63.01
Northumberland.....	.....	76.82	14.08	9.55	100.45
Ontario.....	45.78	91.82	13.22	1.35	152.17
Oxford.....	8.30	103.41	1.15	20.84	133.70
Parry Sound.....	0.75	57.25	85.07	56.66	199.73
Peel.....	8.83	68.14	17.21	13.09	107.27
Perth.....	5.70	114.68	9.59	2.13	132.10
Peterborough.....	7.95	62.58	28.31	26.10	124.94
Prince Edward.....	0.29	33.22	13.89	11.23	58.63
Prescott.....	1.94	73.43	0.50	.....	75.87
Rainy River.....	.....	66.89	50.14	3.86	120.89
Renfrew.....	13.68	142.50	97.11	32.34	285.63
Russell.....	1.36	36.57	0.88	1.10	39.91
Simcoe.....	11.55	256.78	10.87	18.58	297.78
Stormont.....	.....	41.21	1.42	1.75	44.38
Sudbury.....	2.31	130.93	35.95	101.19	270.38
Timiskaming.....	.....	116.46	67.47	67.53	251.46
Thunder Bay.....	.....	406.95	67.21	157.74	631.90
Victoria.....	.....	84.80	45.78	20.16	150.74
Waterloo.....	5.56	48.72	8.42	10.35	73.05
Welland.....	30.33	68.94	10.98	0.30	110.55
Wellington.....	14.13	93.16	5.57	25.48	138.34
Wentworth.....	5.36	137.23	19.82	2.20	164.61
York.....	5.58	91.43	37.44	5.39	139.84
Metropolitan Toronto.....	10.44	38.98	2.96	.....	52.38
TOTALS.....	453.97	5,568.27	1,423.11	1,324.86	8,770.21

APPENDIX No. 14

DEVELOPMENT ROAD EXPENDITURES IN ORGANIZED MUNICIPALITIES—1957
(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1957-58
6	Muskoka Falls-Vankoughnet.....	15.0	Draper and Oakley.....	Muskoka.....	\$ 16,222.99
35	Peninsula Road.....	6.0	Humphry.....	Parry Sound.....	35,451.57
37	Lake of Bays Road.....	6.0	Brunel and Franklin.....	Muskoka.....	24,673.64
40	Kemptville-Merrickville.....	11.2	County.....	Leeds and Grenville.....	59,779.74
43	Lighthouse Beach Road.....	7.0	North Himsworth.....	Parry Sound.....	37,726.73
60	North-South Road, Pardee.....	9.0	Needing.....	Thunder Bay.....	14,986.08
96	Rideau River Road.....	8.0	County.....	Leeds and Grenville.....	48,188.21
106	Church Line.....	20.0	Galway and Cavendish.....	Northborough.....	8,750.27
119	Alderdale-Chiswick.....	4.7	Chisholm.....	Nipissing.....	126.85 Cr.
121	Booth Track.....	4.7	East Ferris and North Himsworth.....	Nipissing and Parry Sound.....	2,978.25
122	Old Nipissing Road.....	3.5	Chapman.....	Parry Sound.....	4,401.80
132	County Road No. 11 (part).....	.....	Christie.....	Frontenac.....	183.40 Cr.
134	Orville-Rossau.....	6.0	County.....	Parry Sound.....	12,831.61
135	Rideroad 10/21.....	4.0	Macfar.....	Parry Sound.....	9,980.61
160	Peninsula Road.....	9.0	Macfar and Wood.....	Muskoka.....	25,374.60
169	Piercer Lake Road.....	13.0	Sherborne and Livingstone.....	Haliburton.....	35,175.89
170	Perth Road.....	12.0	County.....	Frontenac.....	75,162.93
171	Parkford-Foxborough.....	8.5	County.....	Hastings.....	3,008.53
172	French Lake Road.....	11.0	Raglan.....	Renfrew.....	34,158.59
178	French Line.....	5.0	Drilling.....	Lanark.....	11,304.84
180	Quadrille-Foyrmount.....	10.0	Brudenell and Lyndoch.....	Renfrew.....	10,998.52
192	Maberly-Bolingbroke.....	8.3	South Sherbrooke.....	Lanark.....	72,000.00
195	Blackstone Lake Road.....	3.5	Poley.....	Parry Sound.....	15,092.49
197	Mission Harbour Road.....	5.0	Michiganoten.....	Algoma.....	14,854.49
198	Val Caron-Chelmsford.....	11.0	Rayside, Balfour and Bieard.....	Sudbury.....	5,450.90
203	Highland Grove-Kidd's Corners.....	10.0	Cardiff.....	Haliburton.....	5,711.21
205	Big Bay-Oxenden.....	9.0	Keppel.....	Grey.....	19,228.36
208	Long Point Park Approach.....	2.6	County.....	Norfolk.....	37,761.86
209	Concession I.....	4.0	Paipoonge.....	Thunder Bay.....	32,121.12
211	Dacre-Mount St. Patrick.....	6.0	Brougham.....	Renfrew.....	1,810.25
214	Bessemer, northerly.....	8.0	Mayo.....	Hastings.....	6,198.55
216	Boundary Road.....	7.0	Oro and Medonte.....	Simcoe.....	23,053.07
235	Lyn to Row's Corners.....	4.5	Elizabethton.....	Leeds and Grenville.....	18,204.26
240	Lower Faraday Road.....	12.5	Faraday.....	Hastings.....	4,501.50
242	Bancroft Drive.....	4.3	Neelon and Garson.....	Sudbury.....	100,763.58
246	Burden Lake Road.....	2.8	Armour.....	Parry Sound.....	15,583.11
248	Carrying Place-Rednersville.....	8.0	County.....	Prince Edward.....	67,058.86
250	Pilgrim Bridge.....	0.5	Raglan.....	Renfrew.....	5,949.92
259	Mining to Highway 90.....	7.2	Vespra.....	Simcoe.....	134,038.35
263	Anderson Loop.....	5.5	Jaffray and Melick.....	Kenora.....	17,552.10
268	Scotch Corners Road.....	4.5	Ramsay and Beckwith.....	Lanark.....	7,019.22
270	Matawatchan to Wilson.....	2.5	Griffith and Matawatchan.....	Renfrew.....	13,707.60
271	Russell-Embrun-Casselman.....	6.0	County.....	Prescott and Russell.....	13,707.60
274	Nadoc-Morra Lake.....	7.5	County.....	Hastings.....	296,269.77
275	Nosbonsing Lake Road.....	2.0	East Ferris.....	Nipissing.....	25,607.30

278	Houghton Bay Road	3.5	Bastard and Burgess	Leeds and Grenville	12,581.69
279	Acton Corners-Oxford Mills	2.25	Oxford-on-Rideau	Leeds and Grenville	18,427.92
285	Escott to Escott Centre	5.7	Front of Escott	Leeds and Grenville	9,894.02
286	Larder Lake, southerly	4.0	Larder Lake	Temiskaming	13,605.40
287	Swamp Road	3.2	Nepean	Carleton	10,500.00
289	Maas Road	5.0	County	Frontenac	76,767.44
290	Maxville to County Road 21	3.25	County	Stormont, Dundas and Glengarry	34,309.45
291	Kelly's Corner to Cobden	7.5	County	Renfrew	270,259.06
292	Hastings Campbellford	7.0	County	Northumberland and Durham	77,729.62
294	Milhaven Road	2.8	Ernestown	Lennox and Addington	2,994.35
296	Gardiner Road	1.5	Kingston	Frontenac	14,049.17
299	Heron to Radlan Boundary	5.3	Mayo	Hastings	2,262.94
300	Burnt Hills Road	5.5	Storrington	Frontenac	1,186.00 Cr.
313	Centre Line Road	2.5	Plummer Additional	Frontenac	20.62
314	Dean Lake Road	2.5	Thompson	Algoma	92.37
315	Mountain Road	4.2	Needing	Thunder Bay	14,552.71
320	Boundary Road	3.0	Ajajala and Tecumseth	Simcoe	21,029.53
321	Merrickville, easterly	3.5	Montague	Simcoe	7,573.12
323	Marank Village Elphin	16.0	County	Lanark	124,998.60
325	Sideroad 30	4.0	Strong	Parry Sound	15,187.92
327	Green Acres Road	5.5	Perry	Parry Sound	6,150.78
329	Midland River Road	1.5	McKellar	Parry Sound	17,522.65
331	Craft Creek Road	4.0	Mountjoy	Parry Sound	40,487.70
331	Burnley-Warkworth	4.5	Percy and Haldimand	Cochrane	9,867.05
333	Smith's Village Road	4.5	Monck	Northumberland and Durham	1,899.84
334	Mayville-Burris	5.0	Carnarvon	Muskoka	2,072.76
335	Concession 11, Burris	5.0	La Vallee	Mantoulin	20,862.91
336	Highway 3 to Highway 4	4.5	Ponty	Rainy River	14,480.80
338	Concession XII/XIII	3.8	Capitau	Kent	7,548.80
345	Concession III	4.0	Monson	Nipissing	7,615.60
346	Ravenscliffe Road	5.0	Chaffey	Muskoka	12,725.88
348	Pish Hatchery Road	5.4	Dorion	Thunder Bay	88.00
349	Highway 2 to Caintown	3.0	County	Leeds and Grenville	35,789.32
351	Concession X/XI	1.5	County	Parry Sound	4,649.38
353	St. Ola Road	3.0	Lejerrick	Hastings	3,860.24
356	Pennell-Gifford	3.0	West Gwillimbury	Simcoe	5,637.78
357	Relocation County Road 12-B	9.0	County	Simcoe	47,366.99
358	Lake Dore-Golden Lake	9.0	County	Rainy River	37,336.95
360	Dundalk Road in Melancthon	5.3	County	Dufferin	98,517.15
361	Westport-Belford Mills	5.0	County	Leeds and Grenville	30,100.00
364	Caldwell Mills Road	6.0	Lavant	Lanark	12,387.58
365	St. Eugene, easterly	3.5	County	Prescott and Russell	34,601.49
366	Pourmier-Routhier	7.3	County	Prescott and Russell	30,754.44
371	County Road 16	4.0	County	Stormont, Dundas and Glengarry	20,636.08
373	Highway 89-Everett	.....	Tossoronto	Simcoe	56.21 Cr.
375	Highway 69-Longford Mills	5.5	County	Ontario	104,871.77
376	Ryan Road	4.0	Wicklow and Carlow	Hastings	3,113.85
377	Axe Lake Road	3.5	McMurrich	Parry Sound	5,571.86
379	Long Lake Road	4.5	Waters	Sudbury	7,877.66
382	Calton-Griffin's Corners	4.0	Bayham	Elgin	720.06
384	Shelburne Mount Forest	26.8	County	Dufferin	24,195.86
385	Croydon Redville	5.5	Camden East	Lennox and Addington	20,007.68
387	Sutton Avenue Extension	0.7	Atikokan	Rainy River	40,020.00
388	Concession I II	1.5	Tiny	Simcoe	28,637.74
389	Cookstown to Highway 400	2.4	County	Simcoe	73,371.71
391	Kennelley's Corners-Douglas	3.3	Admaston and Bromley	Renfrew	11,084.79
392	Tamworth-Centreville	4.0	County	Lennox and Addington	41,412.84
393	Argyle-Glen Arm	8.0	County	Victoria	44,247.41

DEVELOPMENT ROAD EXPENDITURES IN ORGANIZED MUNICIPALITIES—1957 (Continued)
(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1957-58
394	Limestone Ridge-Twin Lakes	3.3	Belmont and Methuen	Peterborough	27,176.20
395	Cordova-Vansickle	7.0	Harnora and Lake	Hastings	4,762.98
396	Dawson Point Road	3.0	Harris	Teniskaming	5,498.51
397	Highway 65-Twin Lake	3.0	Hudson	Teniskaming	2,482.09
398	Hiawatha Road	3.3	Opemuncie	Peterborough	2,740.84
399	Petawawa-Carson Lake	3.3	Opemuncie	Renfrew	262.75 Cr.
400	Desert Lake Road	4.0	Portland	Frontenac	11,187.60
401	Road 21	1.25	Needing	Thunder Bay	7,523.18
402	Red Rock Road	2.7	Red Rock	Thunder Bay	6,597.34
403	Munster-Sidell	4.5	Goulburn	Carleton	33,444.43
404	River-March Village	1.8	March	Carleton	3,910.85
405	River-March Village	1.8	March	Carleton	3,910.85
406	River-March Village	4.0	North Gower	Carleton	35,611.80
407	John Street, McIntyre	7.5	Shuniah	Thunder Bay	83,383.56
408	Mooney's Crossing Diversion	2.25	County	Lennox and Addington	12,069.48
409	Huntsville-Rosseau	8.0	Cardwell	Muskoka	45,260.50
410	Concession I	1.0	Dalhousie	Lanark	21,513.09
411	Winchester-Melvin	4.0	Winchester	Stormont, Dundas and Glengarry	15,367.43
412	Sideroad 15	2.8	Essa	Simcoe	5,995.17
413	Concession IX/X	4.5	Hungerford	Hastings	17,631.73
414	Snow Road-Ompah	5.0	Palmerston, et al.	Frontenac	24,744.02
415	Halloway By-pass	0.65	County	Hastings	34,411.83
416	River Road	4.5	Horton	Renfrew	45,682.70
417	Lakefield-Nephton	22.0	County	Peterborough	197,984.08
420	Denbigh-Raglan	7.5	Denbigh	Lennox and Addington	45,325.29
421	Combermere-Hopefield	8.0	Radcliffe	Renfrew	23,514.41
423	Grand River Road	11.1	County	Haldimand	175,421.18
424	Beechwood Road	7.0	Richmond	Lennox and Addington	17,999.35
426	Concession VII/VIII, Blake	3.0	Needing	Thunder Bay	20,838.26
427	Cloud Bay Road, Crooks	3.0	Needing	Thunder Bay	6,257.54
429	Warren-St. Charles	6.5	Ratter and Dunnett	Sudbury	21,260.10
430	Township Road	3.0	Nipigon	Thunder Bay	4,304.25
431	Fourth Concession	3.0	O'Connor	Thunder Bay	22,498.24
432	Collingwood Bay Road	2.0	Schreiber	Thunder Bay	2,359.59
433	Highway 35-Graecen's Corners	3.0	Alnwick	Thunder Bay	2,359.59
434	Anstruther Lake Road	5.0	Burleigh and Anstruther	Northumberland and Durham	22,836.00
435	Concession XVI	4.0	Chisholm	Peterborough	15,672.94
436	Catche Bay-Cadrette	3.0	Springer	Nipissing	2,089.66
438	Angus-Creemore	13.0	County	Simcoe	231,103.36
439	Gemier and Boundary Road	12.5	Glackmeyer	Cochrane	19,961.16
440	Rocheville-Castle	4.0	Brudenel and Hagarty	Renfrew	8,000.00
442	Wade's Landing Road	2.0	Wipissing	Perry Sound	21,476.99
443	Concession V	2.25	Wipissing	Norfolk	9,204.32
444	Burnstown Road	4.75	Woodhouse	Renfrew	94,643.90
445	Concession III/IV	3.0	Michab	Frontenac	23,026.05
446	Gloucester-Dunedin	5.0	Nottingham	Simcoe	11,304.07
447	Dillon Road	1.9	Orellia	Simcoe	27,235.10
448	Emfield, southerly	5.0	Darlington	Northumberland and Durham	26,610.78
449	Kemptville, easterly	4.25	County	Leeds and Grenville	39,180.48
450	Lilly's Corners-Lyndhurst	4.8	County	Leeds and Grenville	17,819.11

451	Highway 31-Crysler	15.0	County	Stormont, Dundas and Glenarry	79,254.31
452	Antack Hill, westerly	2.25	County	Prescott and Russell	39,210.83
453	Antack Hill, easterly	3.5	County	Frontenac	17,530.34
454	Sideroad 3/4	2.5	Minto	Wellington	19,879.29
455	Fourth Line	1.0	Tarentorus	Albion	257.03
456	Huslop Loop	6.0	Black River	Cochrane	20,290.60
457	Kushog Lake Road	6.5	Stanhope	Haliburton	20,628.02
458	Fitzroy Harbour Road	2.25	Fitzroy	Carleton	27,344.06
459	Cooper's Falls Road	5.0	Rama and Morrison	Ontario and Muskoka	5,331.32
460	Ridge Road in Rawdon	5.0	County	Hastings	14,949.46
461	Concession XII	3.25	South Himsforth	Parry Sound	24,729.21
462	Brill's Creek-Baptiste	5.5	Monteagle and Herschel	Hastings	24,999.35
463	Rankin-Woito	4.0	Wilberforce	Renfrew	9,980.47
464	Town Line	3.9	Oliver and McIntyre	Thunder Bay	74,182.48
465	9th Concession Hill	1.0	Huntingdon	Hastings	8,400.00
466	Brackening Road	6.0	Watt	Muskoka	4,329.91
467	Highway 11-Marter Boundary	4.0	Playfair	Temiskaming	4,924.89
468	Sideroad 3/4	1.8	Evanturel	Cochrane	33,753.86
469	Elora Road (part)	11.5	County	Bruce	100,743.70
470	Elora Road	11.5	County	Grey	211,911.45
471	Hanover, southerly	3.0	Hagerman	Parry Sound	10,025.20
472	Balsam Lake Road	3.0	Red Lake I.D.	Kenora	3,609.82
473	Hammel-Foresty Road	2.0	Caldwell	Nipissing	1,150.80
474	Main Street, Verner	0.65	Cavan	Northumberland and Durham	32,100.00
475	Swamp Road Diversion	1.15	County	Wellington	52,951.39
476	County Road 84 (part)	3.3	South Elmsley	Leeds and Grenville	7,129.62
477	Bay Road	5.5	Oso	Frontenac	14,982.61
478	Crow Lake Road	4.0	Huntley	Carleton	20,212.62
479	Concession III/IV	2.3	County	Prince Edward	15,000.00
480	Picton-Black River Road	5.5	Teck	Cochrane	27,837.86
481	Goodfish Road	6.0	County	Prescott and Russell	59,967.62
482	Rose Corner-St. Isidore	4.7	Caledon	Peel	5,744.79
483	Third Line East	2.5	McDougall	Parry Sound	19,682.87
484	Relessey Road	9.0	Mono	Dufferin	20,588.20
485	Black Donald Road	8.0	Brougham	Renfrew	2,309.80
486	Boundary Road	5.0	Fitzroy and Torbolton	Carleton	9,429.11
487	Boundary Road	4.0	East Whitby and Darlington	Ontario and Durham	5,446.85
488	Preliminary Surveys	1.3			3,130.98
490	TOTALS	985.75			\$5,783,209.04

APPENDIX No. 15 ROAD MILEAGES IN ONTARIO, DECEMBER, 1957

	TOTAL MILES	TYPE OF PAVEMENT				
		CONCRETE	BITUMINOUS	MULCH	GRAVEL & CRUSHED STONE	EARTH
King's Highways	8,770.21	453.97	5,568.27	1,423.11	1,324.86	
Secondary Highways	2,359.1	.....	38.4	324.5	1,996.2	.....
Total King's Highways	11,129.31	453.97	5,606.67	1,747.61	3,321.06	.....
County Roads	9,342.00	149.69	1,245.23	2,491.81	5,452.32	2.95
Organized Townships	50,509.90	59.56	819.13	708.77	40,489.66	8,432.78
Unorganized Townships	4,702.73	.....	.....	4.00	3,494.35	1,204.38
Total Municipal Rural Roads	64,554.63	209.25	2,064.36	3,204.58	49,436.33	9,640.11
Total All Rural Highways and Roads	75,683.94	663.22	7,671.03	4,952.19	52,757.39	9,640.11
Metropolitan Roads	289.32	10.77	233.49	12.25	27.72	5.09
City, Town and Village Streets	7,830.11	506.76	2,349.31	1,234.82	3,301.40	437.82
Total Urban Streets	8,119.43	517.53	2,582.80	1,247.07	3,329.12	442.91
Total all Rural Roads and Urban Streets — 1957	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02
1956	83,508.24	1,337.88	9,188.76	5,750.73	56,797.11	10,433.76
1955	82,270.59	1,428.88	8,126.72	5,858.38	55,991.30	10,865.31
1954	81,627.96	1,604.64	7,346.45	5,532.49	56,034.91	11,109.47
1952	81,280.89	2,029.15	6,605.52	4,545.60	56,039.64	12,060.98

CHRONOLOGY—DEPARTMENT OF HIGHWAYS 1957-1958

1957

- March 19 — Ottawa Queensway Agreement extends from March 19, 1957 to December 31, 1971.
- March 27 — "A Plan for Ontario Highways" presented in the Legislature together with Estimates for the Department of Highways. Hon. James N. Allan.
- March 31 — D.H.O. Staff totalled 10,981 salaried and hourly-rated employees.
- April 3 — Department of Highways Act, 1957, came into force.
- April 3 — Highway Improvement Act, 1957, came into force replacing Highway Improvement Act R.S.O. 1950 and amendments thereto.
- April — Training school established at Downsview where 836 employees took D.H.O. training courses in year ended March 31, 1958.
- May 31 — Official opening of Highway 401 from Eastwood to Hwy. 4. 38 miles London By-pass by Hon. James N. Allan.
- June and 28
29 — Hurricane "Audrey" caused \$45,000 damage in New Liskeard District.
- August 1 — Redistribution of D.H.O. District Boundaries.
- August — Estimates of "Future Passenger Car and Commercial Vehicle Travel" issued by Planning Division, Planning and Design Branch, D.H.O.
- August 1 — Department of Transport became operative. Motor Vehicles Branch transferred from Department of Highways. Hon. James N. Allan, Minister.
- September — Training Committee established with J. Pogue, Director of Personnel, as chairman.
- September 11 — Widening of Queen Elizabeth Way to six lanes started from Humber River to Hwy. 27.
- October 30 — First pre-qualified contract awarded for grading and reconstruction of Highway 22 from Lobo to Hickory Corners.
- November — Construction completed for 30 miles of relocation of No. 2 and No. 401 as required for St. Lawrence Seaway development. Officially opened for traffic May, 1958.
- November 9 — First contract awarded on Rainy Lake Causeway.
- November 9 — Official opening Kingston By-pass from Hwy. 38 to Hwy. 15 by Hon. James N. Allan.
- November — Access roads from Nakina to Geraldton and Seagram to Caramat were opened to winter traffic 1957.

1957

November — Paving of Hwy. 401 completed into Windsor but official opening postponed. Highway paving completed from junction with Hwy. 2 west of Tilbury to junction of No. 3 and 3B near Windsor.

1958

March 19 — Department Estimates presented in Legislature by Hon. James N. Allan.

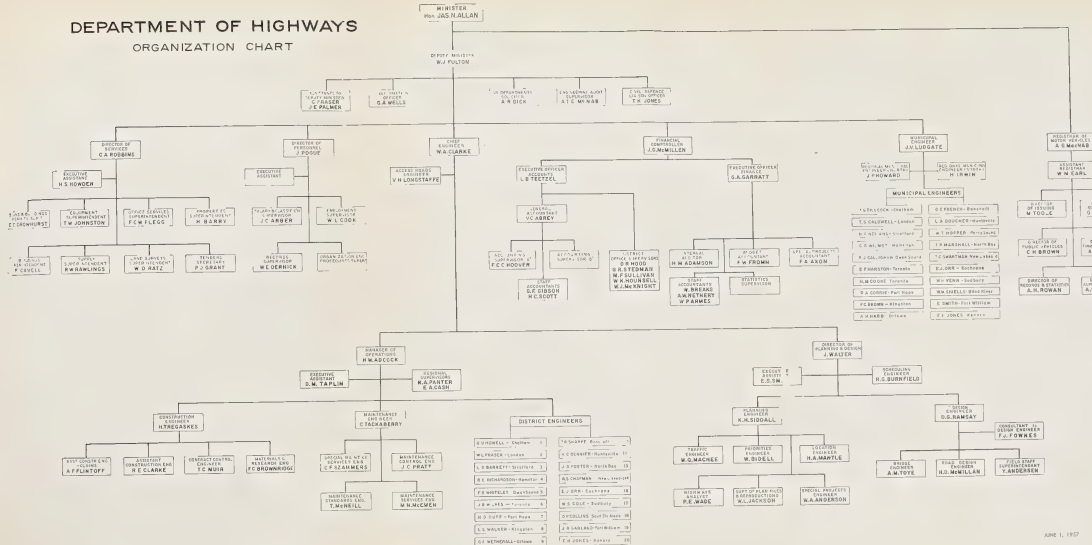
March 31 — D.H.O. Staff totalled 11,765 salaried and hourly-rated employees.

April 28 — Hon. Frederick M. Cass, Q.C., sworn in as Minister of Highways and Hon. Dr. M. B. Dymond, M.D., as Minister of Transport, succeeding Hon. James N. Allan sworn in as Provincial Treasurer by His Honour the Lieutenant-Governor.

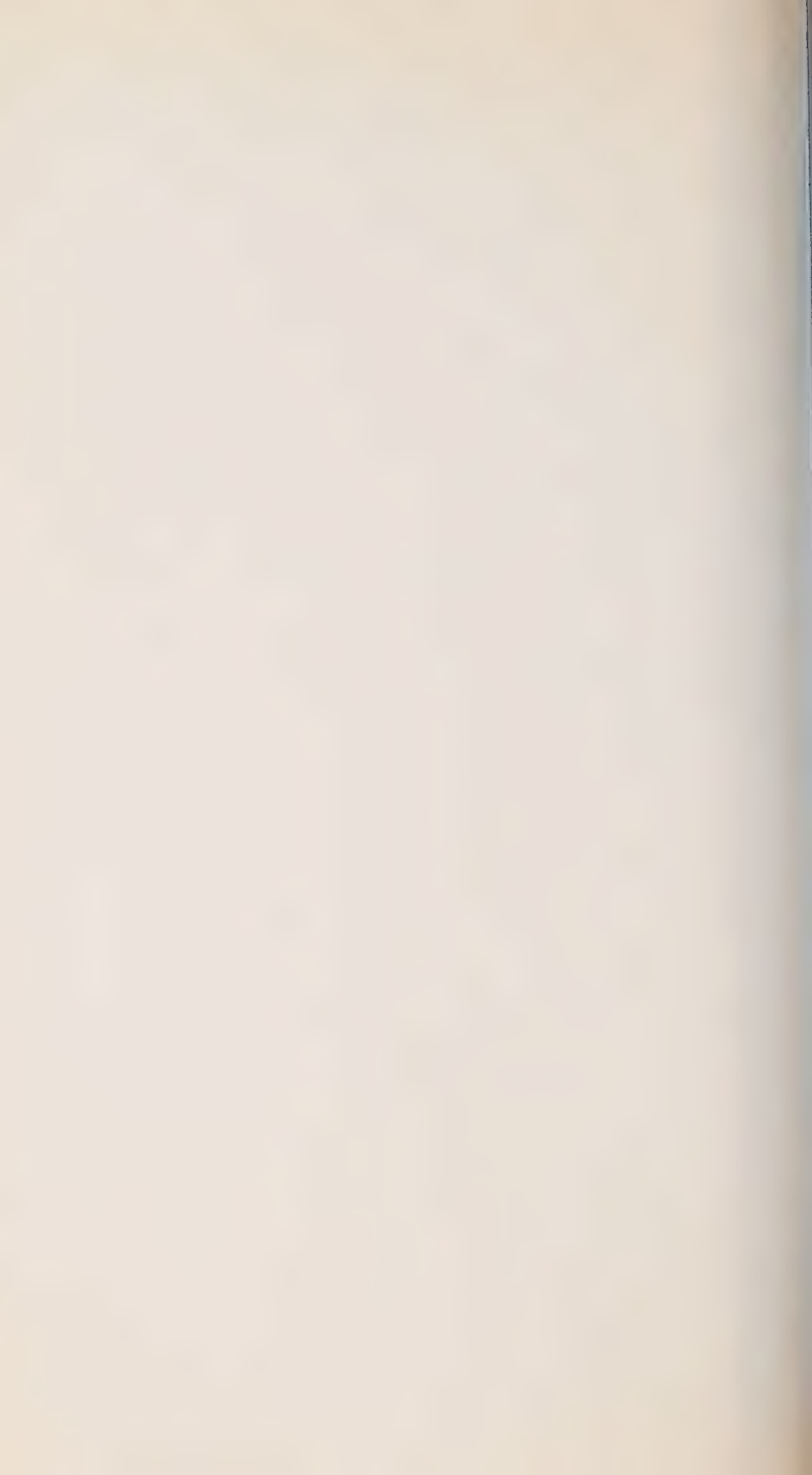
May 26 — Toll Bridge Act effective.

DEPARTMENT OF HIGHWAYS

ORGANIZATION CHART



JUNE 1, 1957





Physical &
Applied Sci.
Serials

Annual Report

OF THE

Department of Highways ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1959

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

Printed and Published by Baptist Johnston
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SESSIONAL PAPER NO. 20

Printed and Published by Baptist Johnston
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TORONTO

1959

TO THE HONOURABLE JOHN KEILLER MACKAY,
D.S.O., V.D., LL.D.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1959.

Respectfully submitted,

FREDERICK M. CASS,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
November 27, 1959.

TO THE HONOURABLE FREDERICK M. CASS, Q.C.,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1959.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

W. J. FULTON,
Deputy Minister

Department of Highways, Ontario,
November 20, 1959.



Northern approaches to Burlington Bay Skyway facing south.



Southern approaches to Burlington Bay Skyway facing north with Lake Ontario on right and Hamilton Harbour on left.

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Facing east on Highway 401 the picture above shows the three-quadrant interchange with Highway 98 and the structure over the Pere Marquette and New York Central Railroads near Windsor.



As Highway 401 approaches Windsor the high speed interchange, above, permits traffic to turn left for Highway 3 and the Ambassador Bridge or right to downtown Windsor and the tunnel via Highway 3B.

SUMMARY REPORT OF DEPARTMENT OPERATIONS

by W. J. FULTON, P.Eng., Deputy Minister of Highways



Progress in highway improvement in Ontario reached a new peak in the fiscal year 1958-59 in the construction of new highways, the re-construction to modern standards of old-established highways and in the maintenance of the entire King's Highway system. At the end of 1958 this system included 8,944 miles of King's Highways and 2,475 miles of Secondary Highways — a total of 11,419 miles as shown in Appendix No. 15.

The 1958-59 construction program was based on the highways needs study "A Plan for Ontario Highways," which was completed early in 1957, and was another step in a long-term program designed to anticipate the growth of motor vehicle traffic up to 1975. Together with long-range planning, substantial improvement has been made in pre-engineering schedules and various changes have been made in departmental organization and procedures to secure the greatest degree of efficiency in carrying out the increase in the work load. These changes are reflected in the detailed reports of Branches and Sections contained in this report.

Total net expenditure by the Department was \$227,547,235 in the fiscal year ended March 31, 1959, as compared with \$212,764,943 in the previous year. Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	FISCAL YEARS ENDING	
	MARCH 31, 1959	MARCH 31, 1958
Gross Capital Payments on Construction of King's Highways and Secondary Highways.....	\$137,650,288	\$127,792,668
Less: Recoveries on (1) Trans-Canada Highway, (2) St. Lawrence Seaway, (3) Ottawa Queensway, (4) Sundry.....	17,932,346	15,528,546
Net Capital Payments on Construction of King's Highways and Secondary Highways.....	\$119,717,942	\$112,264,122
Ordinary Expenditure on King's Highways and Secondary Highways including Maintenance and General Operating Expense.....	45,789,804	42,231,904
Provincial Subsidies on Municipal Roads and Streets and cost of Development Roads and roads in unincorporated townships.....	62,039,489	58,268,917
TOTAL NET EXPENDITURE.....	\$227,547,235	\$212,764,943

Contracts Completed

During 1958-59, capital contracts were completed on 617 miles of grading and granular base, 618 miles of hot mix and concrete paving (including some 85 miles of hot mix paving laid by Department forces, 134 miles of resurfacing and 97 structures).

Contracts Called

Some 305 capital contracts and 170 ordinary expenditure (maintenance) contracts were called in 1958-59 and this represented the largest volume of contracts awarded in any year of the Department's history. The new capital work included 580 miles of grading and granular base, 456 miles of paving and 113 structures. Ordinary expenditure contracts covering maintenance included 100 miles of resurfacing, 16 hot mix patching contracts, surface treatment on 225 miles and 21 winter sanding contracts.

Index

For the second successive year the Department's index of tender prices paid on road contracts showed a decline reflecting lower average unit prices. The index was 124.2 for 1958-59 as compared with 135.4 in 1957-58 and the nine-year high of 156.8 in 1956-57. The index of prices for road materials purchased by the Department showed some decline during 1958-59 from the 1957-58 level but is still higher than that in any previous year back to the base year 1950-51.

In the fiscal year a total of 214.6 miles of new sections of King's Highways were completed for traffic of which 63.9 miles were four-lane highways and 150.7 miles were two-lane highways while 103 new structures were opened for traffic. This compares with 114.39 miles of new highways and 99 structures in 1957-58.

While a record number of projects were in progress in all parts of the province, the completion and official opening of the Burlington Bay Skyway by Prime Minister Leslie M. Frost, Q.C., was a highlight of an outstanding construction year. Another 55.3 miles of Highway 401 were completed and resulted in the opening of four new sections and good progress was made on the Trans-Canada Highway including by-passes at Lindsay and Orillia. Highway 103 Trans-Canada was opened to traffic from Waubauskene to Footes Bay and 67 miles of "The Gap" on Highway 17 Trans-Canada were completed although through traffic over "The Gap" will not be possible until other contracts are completed according to schedule in 1960.

Special Highway Program

On July 30, 1958 the Prime Minister announced a Special Highway Program of large projects which would be undertaken in addition to the present, long-term construction program and which would entail expenditure of approximately \$100,000,000 over a period of years. At the same time, announcement was made that tolls would be charged on the Burlington Bay Skyway and other large structures to be built in the future such as a new high level bridge on the Queen Elizabeth Way over the Welland Canal at Homer and the Rainy Lake Causeway, now under construction. To implement this policy, which does not apply to the general use of The King's Highway, The Toll Bridge Act was passed at the 1958 session of the Legislature and tolls were initiated on the Burlington Bay Skyway on November 10, 1958.

Needs Study

Late in 1958, the Department completed a two-year engineering study of the road and street needs of the municipalities in the province the results of

which were presented in the Legislature in March in a comprehensive report entitled "Ontario's Roads and Streets." Included in this report were the needs for King's Highways and Secondary Highways as established in a previous report, "A Plan for Ontario Highways" and revised to give effect to current conditions. The municipal needs study was undertaken by the Department with the assistance and co-operation of municipal road and street authorities throughout the province and with the advice of advisory committees of city and county engineers. It presents the broad picture of present and future needs for rural roads and urban streets and is intended to serve as a basis for future planning and determination of policy which should result in providing Ontario with a completely integrated system of modern highways, roads and streets.

Following the completion of the municipal needs study a permanent advisory committee of county engineers was established to assist the Minister and the Municipal Roads Branch with county road problems. The Statistics and Economic Section of the Planning and Design Branch undertook the first of a series of regional studies which will be continued in order to determine the future service King's Highways will be required to perform for large urban areas.

Information Section

G. A. Wells, Information Officer

The Information Section is responsible for the collection and issuance of general information regarding Department activities; and for supervision of the photographic sub-section, road information service, an inter-district teletype service and a limited clipping service.

During the year information and pictures were supplied on request to a large number of newspapers, magazines, radio and television stations in addition to personnel in the Department and other Departments of Government. Press releases were made as required on a "straight news" basis and included fact sheets and maps on major road openings.

Further progress was made in the preparation of motion pictures in colour on the Burlington Bay Skyway and on winter maintenance. Several series of aerial pictures were secured on sections of the Trans-Canada Highway, Highway 401 and the Queen Elizabeth Way in addition to the 3,741 pictures taken by staff photographers of construction work in progress in each section of the Province. Approximately 7,000 feet of motion pictures were also taken to assist in special traffic studies on sections of Highways 400, 401 and the Queen Elizabeth Way. A picture library was established for the convenience of various media and a large number of pictures were used by the press in addition to those used in publications produced by the Section.

Arrangements were made for a new exhibit at the Canadian National Exhibition and assistance was given in the preparation of an exhibit at the Central Canada Exhibition at Ottawa.

A road information service was maintained to answer telephone inquiries regarding road conditions and this service was extended to 24-hours-a-day, seven-days-a-week basis between November 3, 1958, and April 14, 1959, to provide round-the-clock service on winter road conditions. A total of 49,547 calls were serviced during the year.

Individual written requests for road information resulted in the mailing of 13,288 road maps, 7,915 road bulletins and 5,249 booklets on roadside parks and camp sites.

The official Ontario Road Bulletin was issued on a semi-monthly basis from May 1 to December 1, 1958, with an average distribution of 16,800 copies of each issue and a peak distribution of 25,386 copies for the August 15 issue. Distribution was made on request and the Bulletin was in demand from individual motorists, automobile associations and tourist information centres throughout Ontario and in the United States.

The teletype service connecting head office with all district offices handled a total of 148,190 messages during the year with an average of over 15,400 per month from November to April when the volume was substantially increased by winter maintenance and road condition reports.

As part of the syllabus of all the Department's in-work training classes, the Information Officer gave half-hour lectures on Public Relations — the definition and theory, operations of the Information Section, and suggestions for the participation of every employee in furthering good public relations. Several addresses on highway progress in Ontario were given to groups in the Province.

The D.H.O. *News*, a magazine published for the information of employees of the Department by the Information Section, reported many of the major highway construction projects completed and continued to tell the story of the part played by the many sections within the Department in ten issues during 1959. The magazine, with an average run of 13,500 copies per issue, is mailed directly to the homes of the great majority of employees and is made freely available to all others through bulk shipments to the District and Regional offices, as well as to Head Office branches.

The D.H.O. *News* is also mailed to every newspaper, radio and TV station in Ontario, as well as to trade magazines and associations interested in highway construction. As a result, many feature stories that were prompted by an article first seen in the D.H.O. *News* appeared throughout the year in daily and weekly newspapers and many of the trade magazines.

Engineering Audit Section

L. R. Eadie, Superintendent

The Engineering Audit Section, forming a part of the Deputy Minister's Branch, is a relatively new organization within the Department, but nevertheless has a definite and important function to perform. One of the main duties of this section is to review the engineering records of all construction and maintenance contracts awarded by the Department. Audits are made during progress of the work and upon completion to ensure that payments are accurate and in accordance with the specifications and standards forming part of the contract. Complete reports are forwarded to various head office or district personnel outlining the results of these audits, and, where necessary, suggestions are made to correct or improve the present and future records.

During 1958 the Engineering Audit Section completed decentralization with audit staff being assigned to the five regional offices. This staff, along with the administrative officers and the Contract Checking Group located at Head Office, makes up the complete Engineering Audit organization.

Electronic Section

A. E. Goodwin, Superintendent

In 1956 it had become apparent that a method of mechanizing routine engineering calculations was necessary in order to handle the expected increase in work load brought about by post-war expansion of highway usage.

A study indicated the use of an electronic computer offered a means of providing rapid and accurate calculations, especially in the field of area and volume calculations for estimating purposes. Mr. Fulton and Mr. J. Walter set in motion the necessary machinery to bring about the required mechanization.

In the following year, 1957, a consulting firm was engaged to prepare a "program" or controlled instruction deck for calculating the road design problems on an I.B.M. 650-2,000 word magnetic drum computer.

In January, 1958, a group of Highway staff was selected to be trained on the use of computers. The training was in two phases: a practical use of the computer owned by the consulting firm and theoretical and practical training through the excellent training facilities provided by I.B.M.

In August, 1958, the trained staff was accommodated in a converted soils laboratory space, and an I.B.M. 650 electronic computer was provided to handle the work load, now of considerable magnitude, that had developed.

Since 1958 many modifications to the existing instruction deck has occurred. Many of the new ideas came from the Department's field staff and office staff, and these ideas were converted into workable form by the Computing Section staff. At the time of writing the Computing staff is directly under Mr. A. T. C. McNab and the work now being handled is quite diversified.

Such fields are: (a) Road Design, (b) Final Pay, (c) Bridge Problems, (d) Equipment, (e) Land Surveys, (f) Property, and (g) Soils Analysis. These are handled on a routine basis.

When the new Administration building at Downsview is completed, the computer will be moved into the new quarters already prepared.

The future of this method for providing rapid answers to many difficult problems seems bright and by careful study and diligent work the Electronic Section can emerge as a leader of its kind among Canadian Departments of Highways.



Clearing on Trans-Canada Highway looking north from Old Woman Bay towards Jamestown.



Facing east showing grading of approaches to the Big Pic River bridge with temporary Bailey bridge at right.

REPORT OF THE FINANCIAL COMPTROLLER

COMPTROLLER, J. G. McMILLEN, C.A.

The following statements outline the expenditures, contract commitments and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1959:

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Summary of Contract Commitment Status
- IV. Trans-Canada Highway
- V. The "Queensway" — Ottawa
- VI. Receipts
- VII. Comparison of Average Unit Prices paid on Contracts

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$227,547,235, excluding transfer of funds to the "Highway Construction Account." The following is a comparison of total expenditures with previous years:

Year ending March 31:

1954.....	\$116,068,211
1955.....	113,445,647
1956.....	158,859,908
1957.....	200,850,551
1958.....	212,764,943
1959.....	227,547,235

Highway Construction Account

It will be noted that Ordinary Expenditure (Statement I) sets out a transfer to "Highway Construction Account" of \$45,000,000. This account is for the purpose of providing Ordinary Account funds for road construction purposes, thus reducing Capital funds otherwise required.

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement IV in the amount of	\$120,070,523
with funds recovered or recoverable of.....	62,706,527
and a net cost to the Department of.....	<u>\$57,363,996</u>

Pre-qualification of Contractors

A form of pre-qualification of contractors became effective in October 1957 and, as of March 31, 1959, was, therefore, in effect for eighteen months. The objective is to provide an administrative routine to ensure that any contractor who wishes to bid on certain contracts called for tender by the Department is financially and technically capable of performing the work within the specified

time should he be awarded the contracts. The procedures have been applied to contracts where the tendered amounts were expected to be in excess of the following:

Grading contracts.....	\$200,000
Paving contracts.....	150,000
Grading and paving contracts.....	300,000
Structure contracts (excluding those for the supply, erection and painting of structural steel).....	100,000

From inception to March 31, 1959 applications for pre-qualification ratings were received from 175 contractors. During the year ended March 31, 1959, 75 capital contracts requiring qualifications were awarded, with an average of 10 bids received on each contract. This compares with an average of 8 bids per contract for all other capital contracts awarded during the year.

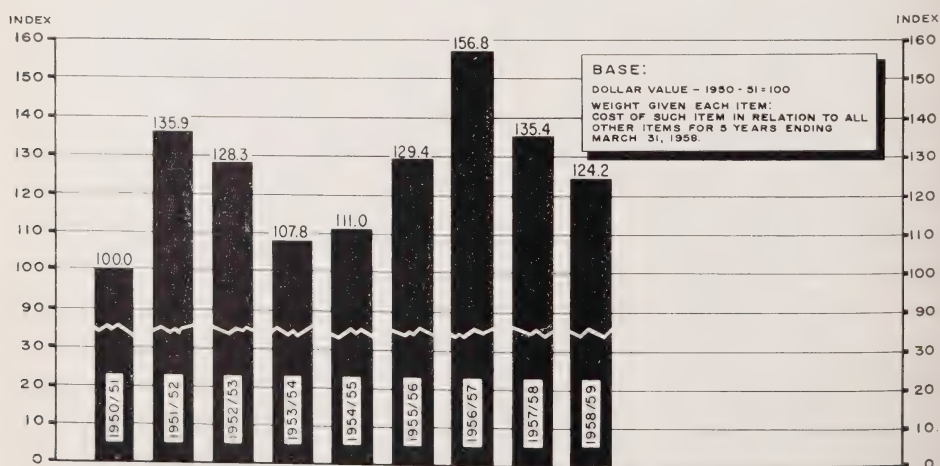
Indices of Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following indices are submitted:

- Index of Tender Prices paid on Road Contracts
- Tender and Material Price Indices

It is evident from the accompanying indices that:

- both unit prices on contracts awarded during the year and unit prices paid for road materials have dropped during the year;
- in the period covered by the indices, since the base year 1950–1951, the trend in both contract and material prices has been upwards;
- the prices paid for road materials are approaching the index level of contract prices paid.



D.H.O. Index of Tender Prices Paid on Road Contracts.

STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1958 and March 31, 1959

	YEAR ENDING MARCH 31, 1959	YEAR ENDING MARCH 31, 1958	
Maintenance of King's Highways and Secondary Roads —			
Winter maintenance (excluding operation of Department-owned equipment).....	\$ 11,912,638	\$ 10,090,121	
Operation and maintenance of equipment.....	5,469,540	5,030,712	
Highway maintenance — patrol costs, safety devices, signs, etc.....	4,242,899	4,465,587	
Engineering overhead and district office expenses.....	2,524,033	2,310,946	
Hot mix patching.....	2,084,694	2,398,647	
Gravel application.....	2,476,565	2,658,149	
Oil dust layer.....	1,067,635	1,008,132	
Warehousing, stores and delivery expenses.....	556,668	522,452	
Communications.....	404,530	373,772	
Surface treatment.....	581,988	577,624	
Zone painting.....	528,550	478,691	
Calcium dust layer.....	363,299	420,387	
Maintenance of lands and buildings.....	338,388	311,181	
Bridge repair and painting.....	248,742	247,865	
Ferry operations.....	234,788	206,013	
Forestry operations.....	174,233	235,933	
District stores — increase or (decrease) in stock.....	139,506	(221,503)	
Electrical services.....	117,139	136,716	
Resurfacing by mulch.....	110,504	201,434	
Tools, weigh scales and other sundry district office expenses.....	667,516	376,601	
	\$34,243,855		\$31,829,460
Repaving of present roads.....	2,119,277		1,809,450
Maintenance of development roads.....	176,794		299,057
Maintenance of roads in unincorporated townships in Northern Ontario.....	729,504		600,194
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.).....	\$37,269,430		\$34,538,161
General Operating Expenditures —			
Purchase of new trucks, tractors, graders, sanders, plows and other road equipment....	\$ 2,958,416	\$ 3,049,609	
Printing and stationery.....	754,312	710,234	
Office furniture and equipment.....	377,618	412,583	
Workmen's Compensation and insurance.....	380,638	328,983	
Unemployment insurance stamps.....	197,427	187,434	
Maintenance of buildings and area office rentals.....	270,213	179,505	
Bus rentals.....	60,359	59,687	
Teletype rentals.....	63,961	57,405	
Staff training.....	165,920	46,536	
Recoverable expenditures.....	83,723	83,434	
Central Stores — increase or (decrease) in stock.....	27,782	(45,655)	
	\$ 5,340,369		\$ 5,069,755

STATEMENT I (Cont'd)

Head Office

General Administrative and Operating staff.....	\$ 3,197,267	\$ 2,722,827	
Travelling expenses.....	304,521	269,827	
Sundry.....	376,619	279,865	
	3,878,407		3,272,519
Roads publicity, maps, etc.....	143,291		154,924
Old Fort Henry expenses (net).....			* 95,796
Burlington Bay Skyway — toll collection costs.....	64,605		
Municipal Subsidies —			
County roads.....	\$ 4,676,753	\$ 4,660,209	
Township roads.....	9,877,873	9,674,351	
Cities, towns and villages.....	6,975,515	6,960,270	21,294,830
	21,530,141		
TOTAL ORDINARY EXPENDITURES.....	\$ 68,226,243		\$64,425,985

PER PUBLIC ACCOUNTS

Total Ordinary Expenditures, as above.....	\$ 68,226,243	\$ 64,425,985
Transfer of funds to Highway Con- struction Account.....	45,000,000	57,500,000
TOTAL ORDINARY EXPENDITURES PER PUBLIC ACCOUNTS.....	\$113,226,243	\$121,925,985

* Transferred to Department of Planning and Development April 1958.

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1958 and March 31, 1959

	YEAR ENDING MARCH 31, 1959	YEAR ENDING MARCH 31, 1958
Construction of King's Highways and Secondary Roads —		
Payments to contractors.....	\$ 74,669,221	\$ 71,885,319
Materials and sundry contract expenditures.....	29,238,216	22,676,218
Engineering.....	8,766,448	7,002,673
	\$112,673,885	\$101,564,210
Construction of development roads.....	6,750,354	5,484,152
Construction of roads in unincorporated townships in Northern Ontario.....	357,921	401,917
	\$119,782,160	\$107,450,279
Expenditures allocated to the above roads —		
Property purchases.....	\$ 11,612,070	\$ 11,932,080
Land surveys.....	2,130,468	2,258,651
Planning and design.....	3,742,563	3,471,962
	17,485,101	17,662,693
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.).....	\$137,267,261	\$125,112,972

STATEMENT II (Cont'd)

Expenditures of Head Office Branches
unallocated and not included
above —

Planning and design.....	\$ 2,250,769	\$ 1,759,620
Property.....	1,497,440	1,261,737
Land surveys.....	1,267,787	1,190,776
Construction of new buildings..	479,505	2,138,640
Soils and research laboratory....	1,268,731	944,864
Engineering audit.....	563,802	447,056
Supply (Bailey bridge parts and steel).....	32,365	359,318
Recoverable expenditures — Net.....		401,493
Sundry expenditures including K.C.S. data control section, electronics section, etc.....	130,903	62,261
	<u>\$ 7,491,302</u>	<u>\$ 8,565,765</u>

Municipal Subsidies —

County roads.....	\$ 9,927,143	\$ 9,171,955
Township roads.....	9,989,668	8,855,860
Cities, towns and villages.....	12,577,964	12,160,952
	<u>\$ 32,494,775</u>	<u>\$ 30,188,767</u>

TOTAL GROSS CAPITAL PAYMENTS

ON CONSTRUCTION..... \$177,253,338 \$163,867,504

Less Recoveries —

Trans-Canada Highway.....	\$ 15,803,757	\$ 12,381,361
St. Lawrence Seaway.....	1,419,520	2,942,685
Ottawa Queensway.....	109,221	204,500
Sundry — Net.....	599,848	
	<u>\$ 17,932,346</u>	<u>\$ 15,528,546</u>

NET CAPITAL PAYMENTS PER

PUBLIC ACCOUNTS..... \$159,320,992 \$148,338,958

EXPENDITURE SUMMARY

Ordinary expenditure.....	\$ 68,226,243	\$ 64,425,985
Capital Payments — Net.....	159,320,992	148,338,958
	<u>\$227,547,235</u>	<u>\$212,764,943</u>
Transfer to Highway Construction Account....	45,000,000	57,500,000
	<u>\$272,547,235</u>	<u>\$270,264,943</u>

STATEMENT III

SUMMARY OF CONTRACT COMMITMENT STATUS AS AT MARCH 31, 1959
TENDER VALUE ONLY

	CONTRACTS AND PROJECTS		
	CONSTRUCTION	MAINTENANCE	TOTAL
Outstanding Commitments at April 1, 1958....	\$ 52,538,335	\$1,662,518	\$ 54,200,853
Contracts Let in Year Ending March 31, 1959	69,747,026	5,080,903	74,827,929
Supplementary Additions to Contracts.....	5,913,174	(352,642)	5,560,532
	\$128,198,535	\$6,390,779	\$134,589,314
Deduct:			
Payments and Sundry Adjustments.....	75,851,882	5,639,143	81,491,025
Outstanding Commitments at March 31, 1959..	\$ 52,346,653	\$ 751,636	\$ 53,098,289

STATEMENT IV

TRANS-CANADA HIGHWAY

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway since the signing of the Agreement with the Federal Government on April 24, 1950, and the supplementary Agreement signed July 27, 1956.

	REFUNDABLE BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Refunded by Federal Government on account of work performed prior to April 24, 1950.....	\$ 1,569,640	.....
Year ending March 31, 1951.....	2,749,329	\$ 7,043,559
" " " 1952.....	3,453,866	8,242,801
" " " 1953.....	4,103,753	11,746,130
" " " 1954.....	2,486,860	9,686,452
" " " 1955.....	6,274,487	5,675,343
" " " 1956.....	3,365,959	9,602,299
" " " 1957.....	4,855,053	13,996,280
" " " 1958.....	12,381,361	20,683,306
" " " 1959.....	15,803,757	27,995,777
Expenditure by Department for property and other non-recoverable expenditures.....	.....	5,398,576
TOTALS TO MARCH 31, 1959.....	\$ 57,044,065	\$120,070,523
Further claims to be submitted based on expenditure to March 31, 1959 — Claim No. 70.....	\$ 2,159,164	
" " " No. 71.....	606,102	
" " " No. 72.....	2,535,364	
" " " No. 73.....	361,832	
TOTAL REFUNDS BY FEDERAL GOVERNMENT.....		\$ 62,706,527
NET ESTIMATED COST TO MARCH 31, 1959.....		\$ 57,363,996

STATEMENT V THE "QUEENSWAY" OTTAWA

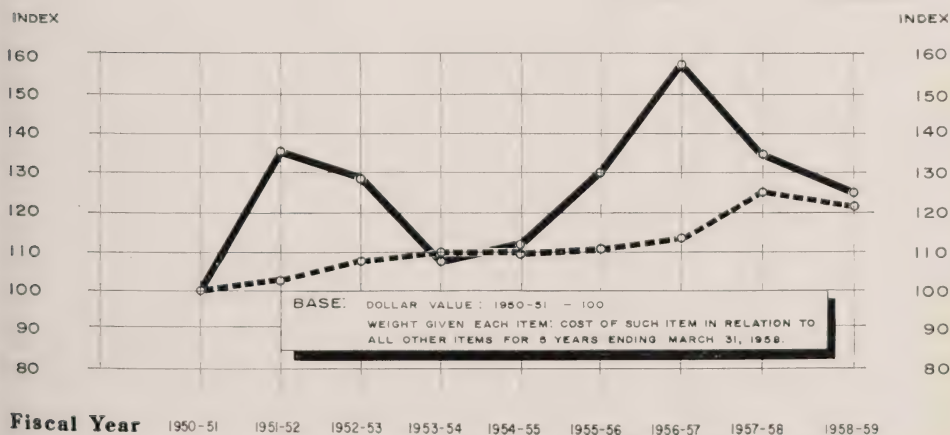
The following statement sets out expenditure and amounts recoverable on the "Queensway" Ottawa since the signing of the Agreement with the Federal Government, the Federal District Commission and the City of Ottawa, on March 19, 1957.

	REFUNDABLE BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Year ending March 31, 1958.....	\$204,500	\$ 563,956
" " " 1959.....	109,221	1,720,076
	<u>\$313,721</u>	<u>\$2,284,032</u>
Further claims to be submitted based on expenditure to March 31, 1959 — Claim No. 4.....	\$183,294	
" " " No. 5.....	106,722	
" " " No. 6.....	35,247	
	<u></u>	<u></u>
TOTAL REFUNDS BY FEDERAL GOVERNMENT.....		\$ 638,984
NET ESTIMATED COST TO MARCH 31, 1959.....		<u>\$1,645,048</u>

STATEMENT VI STATEMENT OF RECEIPTS

For the Fiscal Years Ending March 31, 1958 and March 31, 1959

	YEARS ENDING MARCH 31, 1959	MARCH 31, 1958
Sales of land and buildings.....	\$1,228,365	\$ 741,965
Property rentals.....	232,848	210,609
Sale of services and materials.....	298,526	185,287
Permits — sign and housemoving.....	47,300	45,245
Gas pump revenue.....	40,605	37,224
Gas line franchises.....	8,520	7,710
Burlington Bay Skyway (opened November 10, 1958)....	170,732	
Miscellaneous.....	148,699	69,344
	<u></u>	<u></u>
TOTAL RECEIPTS.....	\$2,175,595	\$1,297,384
Distribution —		
Ordinary revenue.....	\$1,325,668	\$ 534,922
Capital receipts.....	849,927	762,462
	<u>\$2,175,595</u>	<u>\$1,297,384</u>



Fiscal Year 1950-51 1951-52 1952-53 1953-54 1954-55 1955-56 1956-57 1957-58 1958-59

Solid Line—D.H.O. Index of Material Prices Paid on Road Contracts.

Broken Line—D.H.O. Index of Prices Paid on Construction Materials Purchased.

STATEMENT VII
COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS
(for items used for price index purposes)
For period April 1, 1950 to March 31, 1959

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Exca- vation Cu. Yd.	Rock Exca- vation Cu. Yd.	Gran- ular "A" Ton	Gran- ular "B" Ton	5/8" Crushed Gravel "A" Ton	5/8" Crushed Gravel "B" Ton	Bitu- minous Hot Mix Top Course Ton	Bitu- minous Hot Mix Base Course Ton	Sand Cushion Ton	Earth Com- paction Cu. Yd.	Water for Com- paction M. Gal.	Concrete in Culverts Cu. Yd.	Concrete in Struc- tures Cu. Yd.	Struc- tural Steel Fabri- cation Ton	Struc- tural Steel Erec- tion Ton
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	4.56	26.79	31.98	237.93	59.50

OTHER OPERATIONS OF THE FINANCIAL BRANCH

Internal Audit Section

Internal Audit Section was formed in 1954 and currently has a staff of 15 responsible for the review and appraisal of the general administrative procedures of the Department and for reporting to management through the Financial Comptroller. These reports review the standard of performance against the accepted procedures for the operations under review. This Section is not, of course, associated in any way with the engineering activities of the Department.

Through sixteen resident district auditors throughout the Province, the Section is also responsible for the audit of road expenditures of municipalities, for the purpose of establishing the Provincial subsidy thereon. Records of road expenditure by Statute Labour Boards and Indian Reserves are also examined for purposes of road subsidy.

Budget Section

In common with large-scale private industry and most branches of government, the Department of Highways maintains a system of budgetary control. The purposes served are:

1. Keeping expenditures within approved limits. In the case of the Department of Highways, this limit will be the funds voted to the Department by the Legislature.
2. Co-ordinating physical planning of work with financial planning so that the maximum amount of work can be accomplished within established financial limits.

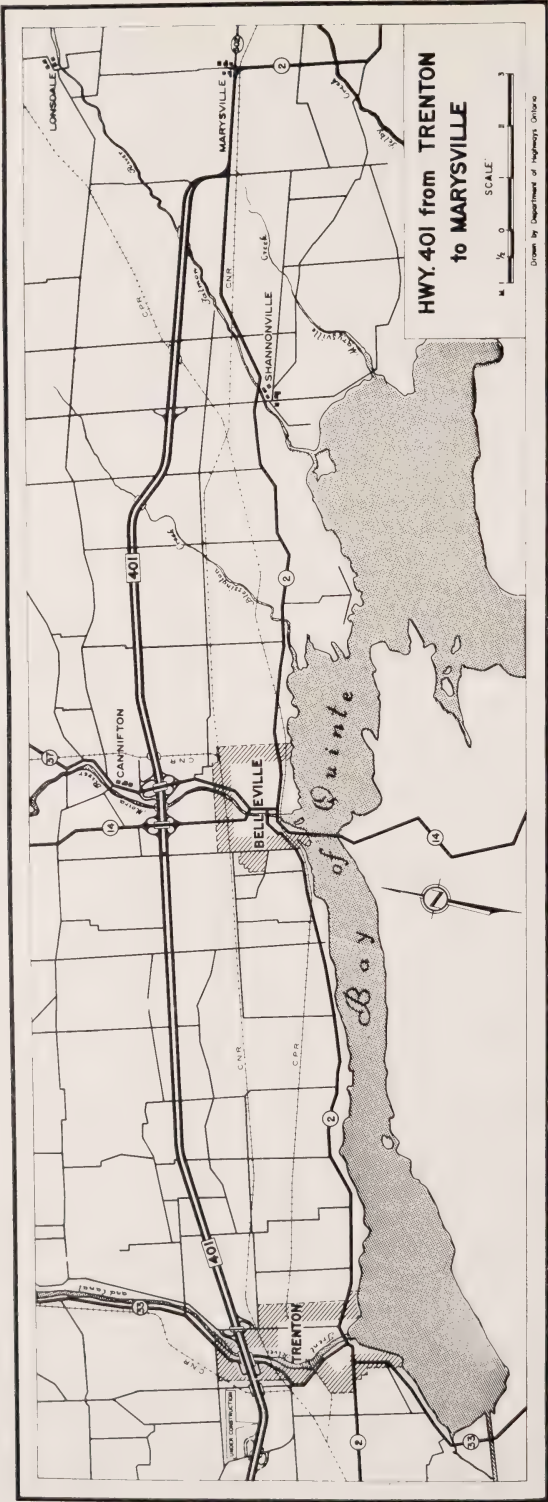
Although control of the budget is the responsibility of the Financial Comptroller's Branch, the successful operation of the budget system depends upon co-operation of the "operating" branches.

Burlington Bay Skyway

The Burlington Bay Skyway was officially opened on October 30, 1958 and toll charges became effective November 10, 1958. The toll rates established were:

CLASS I	Passenger cars and light trucks of less than one ton capacity and not more than two axles.....	Cash 15c. Book of 20 tickets \$1.
CLASS II	Class I vehicles drawing a trailer. Trucks of not more than two axles with capacity of one ton or more.....	Cash 25c. Book of 24 tickets \$4
CLASS III	Class II vehicles drawing a trailer. Trucks having three or more axles. Public vehicles such as buses.....	Cash 45c. Book of 20 tickets \$6
Vehicles operated by the Armed Forces and the Police are toll-free, as are ambulances.		

A manual collection system, with several efficient control devices, is in operation. It is anticipated that automatic equipment will be installed on a trial basis when a new administration building is completed at the Skyway.



The Trenton-Belleville-Marysville section of Highway 401 was officially opened October 7, 1958, at the Moira River bridge. The 23-mile section, as shown above, extends east from the interchange with Highway 33 and permits through traffic to by-pass Trenton and Belleville.

SUMMARY REPORT OF THE CHIEF ENGINEER

by **W. A. CLARKE, P.Eng.,** *Chief Engineer*

The fiscal year 1958-1959 was a banner year for all phases of highway engineering from the analytical and statistical stage through the planning, scheduling, design, plan preparation, contract, construction stages to finally the maintenance stage.

Evidence of the many varied tasks performed and the unprecedented volumes of works undertaken is outlined in the very detailed reports of the branches, divisions and sections. However, in a year that witnessed such an impetus in so many concepts of highway work, several significant highlights merit extra mention.

This year saw a vigorous advance in highway planning and administrative policy with the publication of the report "Ontario's Roads and Streets", a sequel to the 1957 report "A Plan for Ontario Highways." Coincident with this modern approach, speed zoning studies were carried out to establish more realistic speed limits over specific sections of the highway system, coupled with further projects to develop a Province-wide plan indicating travel desires between centres of population of 2,000 and over, and to establish an inaugural step in the development of a listing of accident-prone locations for the Province.

Consistent with this year's peak productivity, highway location survey work was completed over some 1,300 miles involving major bush projects for resources roads construction, allied with the photogrammetric preparation of study plans covering some 2,000 square miles. An innovation this year was the preparation of a "Location Field Procedure" manual.

In keeping with the expansion and modern technology, road designs attained a peak production in preparing some 300 projects for contract call, mainly through the adoption of newer draughting and reproduction techniques and accelerated usage of electronic computations. This accomplishment was achieved despite a decentralization program that saw 65 per cent of the design staff re-allocated to regional office and an extensive training program for many categories of design personnel.

In a like manner to the road design operations, the bridge designs were accelerated by extensive soil and hydrology studies and the continued retention of consulting firms conversant with new design techniques together with the inauguration of the use of electronic computing machines.

This year saw the commencement of several vitally important highway projects and the completion of other contracts of comparable importance. General emphasis was placed on completion and new construction of priority sections of trans-provincial Highway 401, the Trans-Canada Highway, the Ottawa Queensway, the Queen Elizabeth Way and resources roads, on which a very detailed and explanatory report follows. During the year a record number of capital construction contracts were called to cover every phase of highway construction in all parts of the Province according to the reports on studies of highway requirements.

As construction attained a zenith year maintenance work kept pace with expanded operations. The maintenance program covered many diversified operations involving bridge inspection and repairs, zone painting, highway

signing, traffic signals and flasher installations, forestry (planting, spraying, tree removal etc.), winter maintenance, winter employment, and Departmental asphalt plant operations.

Bridge inspection and maintenance crews extended operations into further districts, and this has resulted in an augmented use of Bailey bridging. Increased mileages of completed pavement necessitated increased paint gallonages and additional zone painting units which, together with extra divided highway mileages put into operation, greatly expanded the winter maintenance and forestry work.

Modern maintenance techniques have received detailed studies, particularly in regard to efficiency and resultant effects of chemicals and abrasives in ice control.

The winter employment program carried out by Day Labour Forces on clearing, rock and swamp excavation, and bridge repairs produced good results despite exceptionally extreme winter weather conditions. This winter employment program and the usual winter maintenance operations provided employment for some 8,000 men.

The foregoing generally indicates the achievements of this highly productive year, and the following sectional breakdown illustrates the expanded operations in complete detail.



Central span of Burlington Bay Skyway with old bascule bridge and railway bridge crossing entrance to Hamilton Harbour in foreground.

OPERATIONS BRANCH

H. W. ADCOCK, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P. Eng.
Construction Engineer

*Regional
and
District
Engineers*

MAINTENANCE
C. Tackaberry, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

In 1958–59 construction reached an all-time peak, exceeding the record established in the previous fiscal year. A heavy amount of work was carried out in all parts of the Province, but in particular the construction of Highway 401, the Trans-Canada Highway and the Ottawa Queensway were emphasized, and work proceeded on those projects at an accelerated rate. In addition the Burlington Bay Skyway and approaches, and the St. Lawrence Seaway new highway, two major accomplishments of the Department, were completed during the year.

Besides the projects mentioned, normal construction and reconstruction of various main and secondary highways were carried out throughout the Province.

Some of the more important work carried out was:

SOUTHWESTERN AREA—Chatham, London, Stratford, Owen Sound Districts.

The new Highway 401 entrances to Windsor via Highways 3 and 3B were opened in the late spring of 1958, thus completing this section of Highway 401 from Windsor to Tilbury.

Reconstruction on Highway 98 continued, with work on the Blenheim to Charing Cross and Merlin to Tilbury portions completed during the year.

On Highway 2 at the Creditville C.N.R. crossing and on Highway 3 at the St. Thomas New York Central crossing, overheads were completed, thereby eliminating two dangerous level crossings.

The first contract awarded by the Province under the Department pre-qualification of contractors' system, from Lobo to Hickory Corners on Highway 22, was completed satisfactorily.

The reconstruction of Highway 22 west of Highway 4 continued favourably.

A new structure over the Thames River, on Highway 2 at Delaware was commenced during the year.

Paving of the New Hamburg Diversion on Highways 7 and 8 in the Stratford District was completed.

Work on the diversion and new bridge at West Montrose continued but was not sufficiently completed to open as yet. This is the bridge that is being constructed beside an old covered bridge (the last covered bridge in Ontario). The covered bridge is to be retained after opening of the new bridge.



Equipment at work on Highway 6, Owen Sound District.

Grading of the new Highway 400 extension northwest of Crown Hill in the Owen Sound District was finished by year's end.

Highway 7 between Kitchener and Breslau was widened to 4 lanes, with work largely completed by the end of 1958.

Work continued on the rebuilding of Highway 6 between Guelph and Owen Sound and on Highway 9 and 86 in the Stratford District.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts.

The Burlington Bay Skyway Bridge and approaches were opened on October 30, 1958, with tolls starting on November 10, 1958.

Reconstruction of Highway 8 northwest from Peter's Corners commenced in 1958.

Reconstruction of Highway 20 to four lanes from Stoney Creek to Highway 53 progressed well during the 1958 season.

Highway 401 was opened to traffic from Highway 27 westerly to Highway 10 on November 3rd. Construction continued westerly towards Highway 25, with paving contracts being awarded.

Contracts for grading and for several structures on Highway 401 between Highways 25 and 24 were awarded during 1958, and work proceeded at an accelerated rate.

Widening of the Queen Elizabeth Way from four to six lanes between the Humber River and Highway 27, a distance of 3.75 miles, was completed. Other major improvements on this highway consisted of completion of interchanges at Kerr Street and at the Mississauga Road. Several other interchanges and overpasses were under way by year's end. Work continued on the Queen Elizabeth Way service roads.

The work on Highway 10 from Orangeville to north of Caledon covering 10 miles was practically completed by the end of 1958.

Widening of Highway 27 from Q.E.W. to Highway 2 was completed, and the structure at Highway 2 over the mainline of the C.N.R. was approximately 50 per cent finished.

Grading work on Highway 401 was accelerated east of Newcastle to Brighton, and the 10.2-mile section from Brighton east to Trenton was opened to traffic.

The Trans-Canada Highway by-pass at Lindsay was completed and the Trans-Canada Highway route at Peterborough was started.

Work continued in the reconstruction of Highway 28 from Peterborough southerly.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts.

Highway 401 was opened to traffic from Trenton easterly to Drummy's Sideroad which is west of Marysville and connects with Highway 2, pending completion of further work to the east.

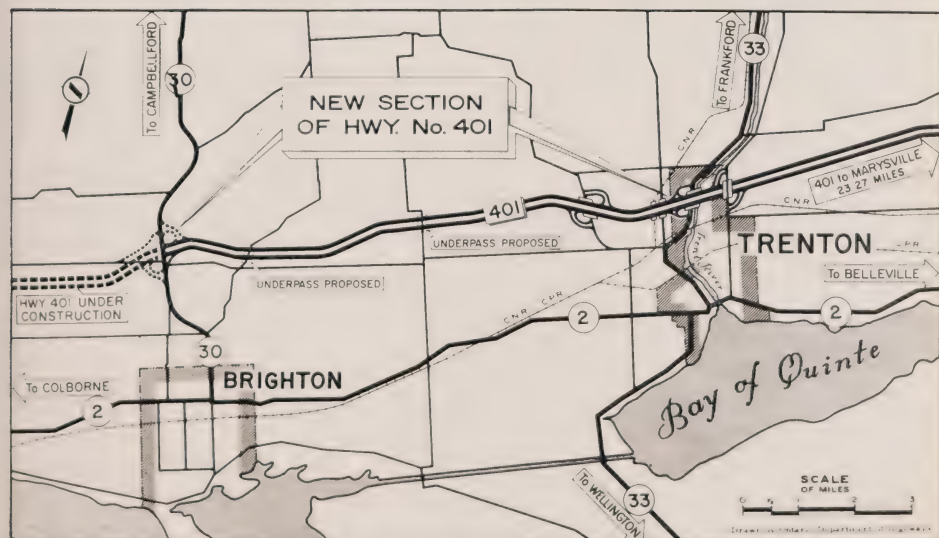
Work progressed favourably on Highway 401 east of the Kingston By-pass with the section from Highway 15 to Joyceville Side Road opened to traffic and paving contracts in progress from Joyceville Side Road to Highway 2 at the east limits of Gananoque.

The rebuilding of old Highway 2S, now Highway 401, from Gananoque to Rockport was started.

Work commenced on the interchange at Highway 401 and 2 at Crystal Beach west of Brockville, and from that point to Prescott grading was complete on Highway 401, with granular base and paving scheduled to start in 1959.

Grading contracts were under way on Highway 401 by the end of 1958 between Johnstown, Cardinal and Iroquois, and between Cornwall and Highway 34.

On Trans-Canada Highway 7, paving was finished at Perth west and Highway 38 west, thus completing a continuous Trans-Canada Highway section from Perth to 8 miles west of Highway 38 (Sharbot Lake).



Highway 401, between Highway 30 and Highway 33, was opened to traffic on November 25, 1958 bringing the total of Highway 401 mileage placed in service during 1958 up to 50 miles.

Grading work on Trans-Canada Highway 15, Perth to Drummond Centre was completed.

In the St. Lawrence Seaway area, the 37 miles of necessary relocation of Highway 2 was completed.

In the Ottawa area, work continued on the eastern approach to the Ottawa Queensway, and on the Queensway itself from the East City Limits to Hurdman's Bridge. A start was made on the western section of the Queensway with work commencing at Carling Avenue.

At Apsley in the Bancroft District a new bridge was completed, thereby improving traffic flow at this point.

The improvement of Highway 60 west of Golden Lake continued.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury and Sault Ste. Marie Districts.

The Orillia Highway 12 By-pass route was completed.

Grading of the new Highway 400 extension from Craighurst to Coldwater was almost completed, and work on the Coldwater By-pass was under way at the close of 1958.

On Highway 103 the new section from Port Severn to Footes Bay (Junction of Highways 69 and 103) was opened to traffic. All that remains to be completed are bridges at Port Severn and paving of their approaches.

On Highway 69 from Nobel to Magnetawan River the reconstruction to Trans-Canada Highway standards continued.

On the Huntsville Highway 11 By-pass, grading was completed and bridge construction continued, with paving of this new five-mile section scheduled for the coming fiscal year.

On Highway 11 at Nipissing Junction at North Bay the C.N.R. overhead was completed, eliminating a level railway crossing.

Work proceeded on the Callander By-pass, both grading and bridge construction progressing well.

Reconstruction of Highway 17 from North Bay to Highway 94 was completed.

On Highway 17, just west of Mattawa, reduction in grade of a long steep hill was completed, this hill having been very difficult for heavy trucks to ascend.

Paving began on new Highway 11 from west of Matheson to Monteith and the grading of Highway 11 on new alignment from Monteith to Porquis Junction continued.

Extension of Highway 101 to the Quebec boundary, linking with Quebec roads, was completed.

Connection of uranium mines in the Elliot Lake area with Highway 108, by construction of 4.1 miles of improvement roads was completed, costs of construction being shared by the various mines, Elliot Lake Improvement District and the Province. Further 15.3 miles of the same work in this area, connecting other uranium mines, was started.



Swamp River bridge on Highway 120 ten miles west of Highway 17 Trans-Canada, Fort William District.

Work continued on the construction of a new highway from Highway 129 south of Chapleau to Hawk Junction.

The grading and paving work on Highway 17 between Iron Bridge and Thessalon, commenced late in 1957, was brought to completion in 1958.

On Highway 17 Thessalon By-pass, the grading was completed. To the north of Sault Ste. Marie, reconstruction of Highway 17 to Trans-Canada Highway standards was started.

Construction of a resources road from Foleyet to Chapleau was started by Department forces on behalf of the Mining and Access Roads Committee, with clearing commencing from Foleyet west for 14 miles and from Chapleau east for 8 miles.

NORTHWESTERN AREA—White River Project, Cochrane, Fort William and Kenora Districts.

On the new "Gap" section of Trans-Canada Highway, access is now possible to 25 miles north of the Agawa River. Grading and structure work is proceeding on schedule for completion in 1960, from this point through to 20 miles east of White River; grading work is already completed in the vicinity of Wawa and Jamestown.

Paving from Marathon east for 17 miles, and from 9 miles east to 10 miles west of White River was carried out in 1958, and the balance of the distance from 19 miles east of White River to Marathon was opened to local traffic as a gravel road, with free ferry service provided by the Department at White Lake Narrows, pending completion of a large structure at that location which was commenced in 1958. A major structure over the Little Pic River was completed.

Reconstruction of Highway 17 to Trans-Canada Highway standards east of Nipigon and east of Fort William continued. In the work east of Nipigon at Cavers, reduction of a long steep grade that was a serious problem for truck traffic, is under way.

Reconstruction on Highway 17 continued north of Shabaqua with the westerly limits at Raith. The new structure and approaches at Kakabeka Falls were finished in 1958. On Highway 11 at Smooth Rock Falls the new

777-foot bridge was opened to traffic on September 23, 1958. The rebuilding of Highway 11 between Kapuskasing and Hearst, and south and west of Cochrane continued. Paving between Hearst and Longlac is now completed.

Department forces, on behalf of the Mining and Access Roads Committee, completed the Hornepayne Access Road from Highway 11 and it was opened to traffic in August, 1958. The Department also completed construction of access roads from Geraldton to Nakina and from Seagram to Caramat.

A resources road from Nakina via Cavell to Durer Lake was started by the Department of Highways, on behalf of the Mining and Access Roads Committee, with the construction of a winter road being completed from Cavell north to Durer Lake to join to the Anaconda Iron Ore (Ontario) Limited mining interests in the vicinity of Percy and Melchett Lakes. Just east of Port Arthur from Highway 17 north to Cheeseman Lake, a resources road was started at Highway 17 for the first 30 miles north.

On Highway 120 from Highway 17 to Atikokan, paving was completed and clearing was carried out on the first 10 miles of extension towards Fort Frances.

On Trans-Canada Highway 17, grading east of Borup's Corners and at Vermilion Bay, and paving at the Manitoba boundary, were completed. Grading is continuing further east from Borup's Corners, west of Vermilion Bay between Kenora and the Manitoba boundary.

Improvement of Highway 71 Fort Frances westerly and east of Rainy River, by grading, granular base and paving, was carried out. Work commenced on the new International Bridge over the Rainy River at the Town of Rainy River. In the Fort Frances area, construction of the Rainy Lake Causeway continued.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1958-59

Hwy. No.	4-Lane Highways	Miles
Q.E.W.	Burlington Bay Skyway.....	5.60
Q.E.W.	Freeman By-pass.....	3.00
401	Hwy. 27 west to Hwy. 10.....	6.30
401	Brighton to Trenton.....	10.20
401	Trenton to Drummie's side road.....	33.80
401	Hwy. 15 to Joyceville side road.....	5.00
TOTAL.....		63.90
	2-Lane Highways	
7	New Hamburg Diversion — paved (previously noted as opened to traffic as a gravel road for 5 miles).....	6.30
7 T.C.	Lindsay By-pass.....	6.00
15 T.C.	Innisville By-pass (opened as gravel road).....	1.00
15 T.C.	Perth to Drummond (opened as gravel road).....	7.50
12 T.C.	South Orillia By-pass.....	3.00
103 T.C.	Waubashene to Foote's Bay.....	29.20
17	From 3 mi. to 6 mi. west of Mattawa.....	3.00
11	Matheson to Monteith (base course pavement only).....	9.30
101	From Quebec border westerly.....	8.20
17 T.C.	Marathon to 19 mi. east of White River (partly paved).....	64.20
17 T.C.	10 mi. north of Wawa to 3 mi. south.....	13.00
TOTAL.....		150.70

SUMMARY OF NEW BRIDGES COMPLETED 1958-59

During the fiscal year 1958-59 the number of new structures completed for traffic was.....

MAINTENANCE

C. TACKABERRY, P.Eng.—Maintenance Engineer

Inspection and Maintenance of Bridges

The detailed inspection of all bridges on Provincial Highways was continued. This work has been continued for maintenance purposes and an attempt is made to record the condition of each bridge annually.

It is our findings that these structures are deteriorating at an accelerated rate, due to the increased heavier traffic weight and volume. The maintenance costs in the future will be proportionately higher and replacement will be necessary sooner than expected.

The bridge maintenance crew, formerly working from Toronto to cover Southern Ontario was dispersed in December to London, Toronto and Kingston Districts. These smaller crews have been making bridge repairs in their surrounding districts. The northern districts continue to do their own repairs and, in cases, some have constructed new structures.

Laminated timber or precast concrete planks were used for most deck replacement and little disruption of traffic was encountered.

The use of Bailey Bridge panels continues to be used to reinforce old steel trusses and will be left in place until the structures are replaced. In some instances complete Bailey Bridges were installed and will remain until the new structure is built. Some of the repair work has so improved the sufficiency of the bridge that it has forestalled replacement for a few years.

Steel bridge painting was continued. A series of lectures on bridge painting was given to our bridge inspectors.

Department-owned Hot Mix Plant

This plant operated on Highway 11, 29 miles west of Hearst and produced 96,735 tons of H.L. 4 asphalt paving material, which represented, when laid on the highway, a total of 84 miles of top course.

Zone Painting

Zone painting continues to represent a very important function of our maintenance operations, with a substantial increase in mileage and gallonage of paint used over the previous year. During the winter two additional dual zone painting units were constructed in the shop at Downsview. We now have three of these units in operation and were primarily constructed for use on four-lane highways.

Signs

There was a substantial increase in the erection of signs over the preceding year. The greater proportion of the increase was due to the signing of new interchanges on four-lane highways.

We have had many favourable comments from the motoring public on our new overhead signs. It is felt that more of these signs should be erected, consequently, the number is being increased as rapidly as possible.



Modern highway lighting at the junction of Highway 401 and Highway 11 provides greater traffic safety.

Electrical

Fifteen new traffic signals and 35 flashing beacons were installed during the year. Illumination of the following intersections was completed:

Hwys. 402 and 7 at Exmouth Street, Sarnia.

Hwys. 401 and 98, Interchange area, Contract 58-234 — Lighting under construction.

Hwys. 2 and 5 East of Paris.

Hwys. 3 and 123, East of St. Thomas.

Hwy. 2 in the Village of Thamesford — D.H.O. contribution 50%.

Hwy. 4 at R.C.A.F. Station, Clinton.

Hwy. 7 at C.N.R. Underpass, East of Kitchener.

Hwy. 6 at Grand River Bridge, Caledonia.

Q.E.W. and Hwy. 25 Interchange, Burlington.

Q.E.W. at Burlington Bay Skyway.

The North and South Approaches to the Burlington Bay Skyway.

Hwys. 20, 53 and 56, Elfrida.

Q.E.W. at Mountain Road, East of St. Davids.

Q.E.W. at Freeman Interchange.

Hwy. 6 at Stone Church Road, Limeridge Road and Ryckmen's Corners.

Q.E.W. and Hwy. 2 Interchange at Burlington — Lighting under construction.

Q.E.W. and Beach Road Interchange, Burlington Beach — Lighting under construction.

Q.E.W. and Mississauga Road Interchange.

Q.E.W. at Bronte Side Road — Temporary — Highway under construction.

Q.E.W. at Kerr Street Interchange, Oakville.

Q.E.W. West of Humber River and Lakeshore Road entrance and exits.

Hwys. 401 and 11 Interchange.

Hwy. 401 West of Hwy. 11 to Avenue Road.

Hwy. 122 at Ford Plant, Oakville.

Hwy. 5 at Railway Overpass East of Cooksville — Temporary lighting.

Q.E.W. and 4th Line of Trafalgar Twp. Appleby — Temporary lighting, Highway under construction.

Q.E.W. and 3rd Line of Trafalgar Twp. — Temporary lighting — Highway under construction.

Q.E.W. and Hwy. 27 Interchange — Lighting under construction.

Hwys. 115 and 35 North of Orono.

Hwys. 7, 35 and 35B, South of Lindsay.

Hwy. 2 at La Salle Causeway, Kingston.

Hwy. 2 at Joyceville Side Road, East of Kingston.

Hwy. 2 at Drummies Side Road, Marysville.

Hwys. 17 and 17 Revised, Hawkesbury.

Hwys. 12 and 12B, Orillia.

Hwys. 11 and 118 at Baysville Road, Bracebridge.

Hwys. 11 and 132, South Entrance to Bracebridge.

Hwys. 17 and 108.

Hwy. 17 at Cutler.

Salt Sheds

Thirty-two Salt sheds were completed during the season. These were of the new design to hold 200 tons of bulk salt.

Forestry

Grass seeding acreage was increased again this year, totalling 4,963 acres. Grass seeding machinery is now available for use throughout all districts in the Province.

Spraying for chemical control of weeds and brush covered 5,669 miles.

Tree planting operations accounted for 68,154 trees and shrubs being placed on both four-lane and standard-type highways. Some districts have carried winter planting of large trees for general landscaping and park work. Landscape planting is being carried out at new district offices as they are completed.

The removal of dead and dangerous trees continues as a primary function of forestry operations during winter months. The purchase of a hydraulic skymaster with pneumatic pruning system has made possible high level pruning to eliminate branches interfering with traffic or blocking vision.

Winter Maintenance Studies

The quantities of chemicals and abrasives used in snow removal and ice control on King's Highways throughout the Province were given detailed study. Chemicals and abrasives were found to be used with high and consistent efficiency, and together with snowplowing, ensure bare pavements throughout much of the Province. The interpretations of quantities of chemicals and abrasives used were made in terms of traffic volume served for each road section, which serves as a measure of the benefit derived.

The Maintenance Section also conducted laboratory tests and an extensive review of technical reports as part of a continuing program to determine to what extent the corrosion damage experienced by vehicles travelling Ontario Highways could be attributed to the use of ice control chemicals and possible means of reducing such damage.

A winter employment program was carried out by day labour forces during the winter months. This work consisted of clearing, grubbing, rock work, swamp excavation, bridge repairs and bridge construction.

The work produced on our winter employment program was very good, considering the extreme winter weather conditions.

Extensive work was carried out on picnic sites, the Federal Government contributing to 50 per cent of the cost on work of this nature. We are at present maintaining over 1,000 picnic sites in the Province and the number is being increased every year.

Some 8,000 men were employed on the winter employment program and winter maintenance operations.



During the winter of 1958-59 the maintenance forces of the Department snowplowed and kept open over 11,000 miles of King's Highways and Secondary Highways.

TABLE SHOWING TOTALS OF WORK DONE, 1958-59

Class of Work	No.	Tons	Miles
Automatic signals at railway crossings.....	20		
Bituminous hot mix pavement		1,871,431	455
Bituminous mulch and cold mix		185,206	113
Bituminous prime on gravel roads.....Gals.	3,464,944		1,208
Bituminous resurfacing old pavement.....		279,067	156
Bituminous surface treatment	Gals. 1,011,611		345
Bridges built	103		
Bridges painted	86		
Calcium dust layer — gravel roads.....		6,464	2,062
Calcium for de-icing roads.....		94	72
Concrete base — asphalt top, widening from 18' to 44'..			4
Concrete pavement — widening from 18' to 44'.....			4
Crushed gravel and stone (by contract).....		4,187,752	1,728
Crushed gravel and stone (by Dept. Forces).....		694,565	5,003
Grading and culverts.....			495
Granular base on new grading.....		11,713,317	505
Granular base on old grading.....		1,691,227	752
New buildings erected this year.....	60		
Off-road parks maintained.....	73		
Roads snowplowed and kept open (King's Hwys.).....			9,410
Roads snowplowed and kept open (Secondary Hwys.).....			2,505
Roadside picnic places maintained.....	1,070		
Routine maintenance (King's Hwys.).....			9,387
Routine maintenance (Secondary Hwys.).....			2,551
Salt for de-icing roads (raw).....		133,713	
Sand in stock piles (with salt).....		39,520	
Sand for winter maintenance.....		897,365	
Scale houses maintained	39		
Seeding by Department Forces.....Sq. Yds.	39,237,965		
Shrubs received and planted.....	70,718		
Signs newly erected or replaced.....	70,762		
Snow hedges planted this year.....			14
Snow fence erected, dismantled, stored.....			1,214
Traffic lights installed this year.....	15		
Weed control.....			4,807
Zone painting (King's Hwys.).....Gals.	122,198		10,210
Zone painting (Secondary Hwys.).....Gals.	6,537		460



During 1958 D.H.O. maintenance forces seeded 4,963 acres of right-of-way using the hydraseeder mulch-blower method of seeding as pioneered by the Department in Canada.

CONTRACT WORK FOR 1958-1959**T. C. MUIR, P.Eng.—Contract Control Engineer**

Possibly one of the sections most affected by the extent of the work performed in this year would be the Contract Control Section, which is a focal point of practically all phases of planning, designing, constructing and maintaining operations.

This year saw the awarding of 475 contracts of all types which is equivalent to the preparation and awarding of two contracts for each and every working day throughout the year. This contract preparatory work alone accounts for the typing and printing of some one-half million sheets of tendering information, with the subsequent awarding of the contracts requiring the additional reproduction of another one-quarter of a million sheets. The expanded number of contracts, coupled with several major revisions to key specifications, necessitated the printing of approximately two million sheets of tender and contract information throughout the year.

Consistent with the increase in contract awards were the increased records and reports on each contract and on each contractor's performance. Up-to-date records were currently maintained on just over 500 contracts and some 180 contractors, with the reports on contractors' performances having particular significance this year due to the inauguration of pre-qualification of contractors prior to bidding on certain departmental contracts.

During the fiscal year some 500 books of specifications, prepared in a more serviceable reduced loose-leaf form, were issued to departmental personnel concerned, and arrangements were made to expand this circulation throughout the entire construction industry covering contractors, distributors, suppliers, consultants, municipalities etc. It is anticipated that probably some 2,000 Standard D.H.O. Specifications may be in circulation by the end of next year.

The increased volume of contract work undertaken this year was accompanied by an increased number of statistical and other reports, and some 30 such reports were forwarded to departmental officials, 50 reports to bonding and insurance firms, and in the vicinity of over 500 letters of correspondence were mailed to the agencies of the industry and to the public at large in response to the many queries received.

Summary of contract work awarded for 1958-1959 follows.

Type of Work	Construction	Maintenance	Total
Bridge Painting.....	.....	13	13
Clearing.....	1	.....	1
Concrete Paving.....	2	.....	2
Crushed Gravel.....	16	84	100
Grading and Culverts.....	67	.....	67
Hot Mix Patching.....	.....	16	16
Hot Mix Paving.....	76	.....	76
Prime Dust Layer.....	.....	9	9
Resurfacing.....	2	9	11
Screened Sand.....	.....	11	11
Structures.....	97	.....	97
Structural Steel.....	34	.....	34
Surface Treatment.....	.....	6	6
Winter Sanding.....	.....	22	22
Granular Base and Miscellaneous.....	10	.....	10
TOTALS.....	305	170	475

MATERIALS AND RESEARCH SECTION

A. RUTKA, P.Eng., *Materials and Research Engineer*

The 1958-59 fiscal year evolved as a progressive period for the Section, reflected by an increase in testing and field contract control in all phases of highway construction.

The greatly needed acquisition of two qualified and capable engineers to direct the Foundations and Soils subsection and the Chemical subsection was realized during the last half of the year. Expansion of the Foundations and Soils group will be evidenced in the next year's work, when they will assume most of the foundation investigations for the Department, the greater percentage of which has been formerly carried out by private consulting engineers. The Chemical group will now enter a broader area of material testing, and will study and prepare specifications for products used by the Department which heretofore had no specification or control media.

Toward the close of the year, arrangements were under way to decentralize the section, in compliance with the general decentralization program of the Department, and steps were being taken to initiate the organization of regional offices in London, Toronto, Kingston and Fort William regions.

Two mobile laboratories were purchased and began operations in the Port Hope and Kingston areas to test and control materials being used on the Highway 401 extensions east from Newcastle and Kingston. For the quality control of concrete paving operations on Highway 401, from Highways 27 to 10, a field concrete laboratory was installed at the junction of Highways 401 and 27.

Subsequent to extensive research, testing and evaluation of results, four informative papers were prepared during the year. They were as follows:

1. "Field Evaluation of Methods of Curing Concrete Pavements."
2. "Highway Shoulders — An Appraisal of Problems and Suggested Remedies."
3. "Laboratory Evaluation of Bituminous Additives for Use in Mulch or Cold-Mix Plant Application."
4. "Correlation of Laboratory Compaction for Asphaltic Concrete Pavements."

The last two papers were presented at the annual meeting of the Canadian Technical Asphalt Association in November, 1958.

One staff member represented the Department of Highways as an observer, for a period of one year, on the five-year road test project of the American Association of State Highway Officials at Ottawa, Illinois. This road test is a scientific study of the performance of highway pavements under known thicknesses when subjected to repeated passages of vehicles applying known loads. It is anticipated that the results of this test road will be of considerable help in formulating our own pavement designs.

Foundations and Soils Subsection

Although an increased and adequately trained staff remains a requisite of this subsection, a considerable increase in volume of work and investigations was effected. Scheduled dates for pre-contract engineering had to be met and to this end 189 projects, totalling 979 miles, were covered and reported to the Design Section of the Planning and Design Branch. Each project required a complete field investigation, preparation of a soils report indicating soil types, suitability of materials and granular requirements. Recommendations as to grade lines based on soil conditions were also made on each project. In addition, 560 miles of subgrade reconnaissance with power auger equipment, 214 miles of pedological surveys and 2,160 miles of performance surveys were completed.

Control through the medium of compaction checks was greatly increased. This was a result of further instruction being given at the annual courses of instruction for new and advanced soil inspectors. Compaction equipment kits were supplied to most Districts and were extensively utilized by District personnel who received training at the various soils courses.

Due to the lack of an adequate foundation staff until the latter part of the year, the number of foundation investigations carried out was small. A large portion of the work, therefore, was contracted to consultants. However, 55 investigations on proposed bridge sites, which constituted 6,157 feet of drilling, 152 feet of which was in bedrock and 3,490 feet of cone penetration testing, was carried out.

Materials Subsection

Granular pre-engineering continued with a marked increase over the previous year. With two full-time crews operating a gradall and a truck mounted power auger, it was still impossible to complete the scheduled investigations. As a result, the year ended with a sizeable carry-over. During the year 324 pits were investigated with power equipment, 55 preliminary investigations and 27 quantity checks were completed, necessitating the taking of 1,329 samples. The listing of locations and preliminary information for all known granular deposits involved the preparation, printing and supply of 116 strip maps for the use of Districts and contractors interested in bidding on highway construction.

Continuous examination and sampling was maintained on commercial suppliers by the taking of 715 samples, thus ensuring quality control and assisting the suppliers to meet Department specifications.

Under the direction of the bituminous engineers and through the supervisory inspectors, the section provided materials control and technical assistance on 112 bituminous paving contracts; technical assistance was also provided to the Metropolitan Toronto authorities responsible for construction of the Gardiner Expressway. Design mixes were prepared for 86 bituminous paving contracts and, as a field control, 227 plant checks were carried out.

Although not yet in operation, the first mobile bituminous laboratory was purchased. It is anticipated that it will render valuable service, in the field, for emergency bituminous testing and bituminous design work during the next year.

Technical advice on concrete problems was provided at both design and construction levels, incorporating mix design and overall quality control in a variety of projects. Follow-up studies in performance and durability were also made and, where necessary, investigations were launched on specific problems.

Concrete Pavement

Early in 1958 a design and specification study was started to find the best type of concrete pavement to carry heavy traffic and provide a good riding surface. The first such pavement, 2.9 miles long, was constructed on Highway 401 westerly from Highway 27. It consisted of concrete 9 inches thick, reinforced with welded steel wire mesh, with one joint every 99 feet; at this point steel dowels carry the load of a passing vehicle from one slab to the next, which should prevent the development of "stepping."

Quality control of the concrete and constituent materials was maintained by engineers and supervising inspectors for two concrete paving contracts on Highway 401. This involved 203,500 square yards of pavement, from Highways 27 to 10 (5.8 miles) and four concrete base widenings and reconstructions at Windsor (Highway 39), Chatham (Highway 2 By-pass), London (Highway 4, Lambeth) and Ottawa (Queensway interchanges), a total of 120,000 square yards of concrete base.

Structural Concrete

Three quality control engineers and 8 supervising inspectors carried out inspection of 190 contracts, as required, in order to make certain that the specified quality of concrete was used in bridges, culverts and curb and gutter throughout the Province. Simultaneously they provided "on the job" training to district concrete inspectors and gave technical advice and assistance to construction staff.

During the year, prestressed concrete in bridge beams was used more extensively than in the past, thus requiring special attention to achieve high-quality concrete necessary for this type of construction. The beneficial effects of this, and the research and development projects on concrete reported elsewhere, will subsequently apply to all concrete.

Chemical Subsection

In addition to evaluating, recommending and controlling a wide variety of materials used by the Department for construction and maintenance work, this Subsection provides technical assistance to other sections of the Department. Although there was an increase in the amount and variety of materials tested, the past year has been especially notable for the increase in technical services provided to such groups as the Bridge, Purchasing, Traffic, Bailey Bridge and Equipment Sections, as well as to the Districts.

Assistance has been provided on technical aspects involving transportation of dangerous chemicals, cleaning procedures for floors, inspection of primed structural steel, tinting of aluminum paints and various field problems involving the use, application and control of the materials. Four lectures were given at the bridge painting schools held in Toronto, London, Kingston and North Bay.

Several new specifications for materials and their application were prepared and adopted for Department use and many older specifications reviewed for possible revision or modification. New specifications were adopted for alkyl-

type bridge finishes, tarpaulins, large and small warning flags, varnish and calcium chloride-water solutions. Other specifications which are under review include bridge primers, fertilizers, grass seed and brush and weed killers. More uniform paints should also be obtained now that Canadian Government standard colours have been adopted for the bridge and equipment finishes.

Pre-purchase evaluation of paint samples and control measures on paint shipments constituted a major portion of the work carried out by the laboratory. Increased interest of suppliers for zone or traffic marking paints was noted with the submission of 37 paints and 7 glass bead samples for pre-purchase evaluation. This involved the complete laboratory analyses as well as the field service testing. Control of zone paint shipments necessitated the testing of 183 paint samples and 23 samples of glass beads. Thirty-six samples of guide rail paint were tested for control to Central Stores.

The study of bridge primers and bridge paints was continued during the past year and has resulted in the preparation and adoption of a new performance-type specification for bridge paint finishes. Laboratory investigations are still underway to determine the type of primers most suitable for field and shop application. This investigation has involved the evaluation of 11 primers. Fifty-two samples, representing shipments of these materials, were also tested.

Assistance was provided to other subsections by providing information on the chemical analyses of 72 cements and 12 concrete samples, 300 muskeg, 26 soil and 40 water samples. Research and control investigations made on fourteen asphalt or polyethylene-coated moisture barriers were also reported.

The wide use of salt for winter maintenance of roads throughout the Province necessitated the testing of 313 samples of salt to ensure that they met the specified requirements. An investigation was also made on a new type of coated-bag proposed for salt shipments.

Another major portion of the work carried out included materials used by the Special Maintenance Services Section. Reports were issued covering tests made on approximately 331,000 pounds of grass seed, 25 brush and weed killers and three fertilizers. Materials used by the Equipment Section were represented by pre-purchase and control testing of antifreezes, floor cleaners, equipment paints, primer surfaces and petroleum products.

Work carried out at the request of the Traffic Section included investigations on plastic traffic markers, aluminum paints, reflective sign materials, sign paints and pretreatments for plywood.

Investigations of a more specialized nature were made on fire retardant paints, paints for asphalt curbs, paint thinners, friction tapes and flags. An extensive investigation was made on several types of paint removers that could be used for removing unwanted traffic lines from highways and recommendations were made on the type of material and application procedures that would provide the most effective results.

Routine Laboratory

The volume of highway construction was evidenced by the increased operations of the laboratories at Toronto, London and Fort William, wherein the number of tests conducted showed a consistent increase over the previous year.

Effective control of soils, granular materials and compaction of soils, necessitated the testing of 6,061 specimens. Adequate quality control and the presentation of design mixes for bituminous and concrete contracts, required the testing of 4,720 samples. Surveillance of aggregates used from commercial sources, and the checking of new sources, was continued by conducting 748 tests.

Control of bituminous pavement construction was continued by exercising asphalt plant and road checks. This operation necessitated the testing of 2,147 asphalt specimens made up as follows:—

- (a) 719 check samples from contracts
- (b) 454 asphalt plant checks, and
- (c) the remainder representing 31 contracts on which pavement investigations were conducted.

Testing of bituminous materials was continued through the testing of 2,482 asphalt cements, 517 liquid asphalts and 120 asphalt emulsions.

Increased construction of structures, culverts and pavements was reflected by the testing of 737 samples of aggregate (an 18 per cent increase over the previous year) and the testing of 10,392 field cast specimens (an increase of 49 per cent). The testing of 1,065 cement samples, representing shipments of cement to the Department from all suppliers, showed a 37 per cent increase. As a means of ensuring high strength concrete, the laboratory presented 198 concrete mix designs for contracts.

The London Laboratory, as a local service to the southwestern part of the Province, processed 1,849 tests, a 28 per cent increase over the previous year. The number of pavement samples tested for bituminous pavement control was relatively the same as the previous year.

The Fort William Laboratory experienced its first full year of operation. During the year it effected 409 tests on aggregates and further serviced the northwestern section of the Province through the performance of 104 extraction tests on bituminous pavement samples.

The Kingston and Port Hope mobile laboratories also fulfilled their commitments in the carrying out of 107 and 367 tests respectively and supplied the eastern area and Highway 401 construction with "on the spot" results.

Research and Development

A number of investigations started in the previous year were concluded, and new projects instituted. A Special Projects Engineer was assigned in the last month of the year to commence a study of several special projects.

(a) Slag

Last year preliminary studies were begun to establish the value of slag screenings in relation to bituminous paving. The initial work was confined to one source of slag, but this has now been widened to incorporate all known sources. This study is continuing.

(b) *Concrete*

In the laboratory and in the field, investigations were made into problems arising from the use of concrete in pavement and structures.

(1) *Durability of Coarse Aggregate* — Our laboratory freeze-thaw testing machine was used for testing coarse aggregates, field performance having indicated same to be of poor durability, e.g. cherty and shaly stones. Tests were made on 138 specimens and, as time permits, most major aggregate sources will be tested.

(2) *Evaluation of Admixtures* — Freeze-thaw testing was completed for this program and scaling tests were started on all the admixtures tested. The scaling tests are intended to simulate the effects of using salts to clear ice and snow on concrete pavement. De-icing chemicals of this nature can cause severe surface scaling on poor concrete.

(3) *Vibration of Concrete* — In an attempt to increase compaction and improve surface appearance, a short investigation was undertaken and completed. Results of this work were taken into account in preparing revisions to specifications.

(4) *Alkali-Aggregate Reaction* — Work was continued on material sources in the Kingston area in addition to our initial investigation last year. 195 specimens from this area were tested.

(5) *Grout for Prestressed Concrete and Cable Ducts* — Work was continued in the Cement Laboratory, although progress was slow. A series of field tests were also completed.

(6) *Silicones for Protection of Concrete* — Freeze-thaw testing was continued and scaling tests begun with 36 specimens.

(7) *Insulated Forms for Winter Concreting* — An extensive program relative to the manufacture and testing of 4' x 4' x 18" insulated concrete blocks, under controlled conditions, was largely completed during the year. In particular, using straw as the insulating medium, field trials were successfully made on several structures in the Toronto District.

(8) *Excessive Fines in Concrete Mixes* — In order to determine the effect on concrete of varying quantities of fine material passing the No. 200 mesh sieve, an investigation was begun in the cement laboratory. At the close of the year, this was approximately one third complete.

(9) *Field Evaluation of Concrete Curing* — On Highway 401 at the junction of Highway 10, field trials were carried out on different methods of curing concrete pavement using wet burlap, plastic sheetings, papers and sprayed membranes. The results of this work were reported within the Department.

(c) *Soil Stabilization*

Arising from the general stabilization evaluation program which emphasized soil-cement as the chemical stabilization technique, Mechanical Stabilization and a variety of other chemical stabilization methods evolved.

Notably, following the completion of a successful trial section of stabilized highway shoulder in the Sudbury District, it was in order to recommend measures for stabilizing existing soft shoulder conditions in the New Liskeard,

Sudbury, Blind River and Huntsville Districts.

A further trial section of shoulder stabilization was carried out at Gravenhurst employing both mechanical and chemical stabilizing techniques.

Laboratory investigation into the properties of several chemical stabilization methods has been continuing with particular stress on soil-lime-fly ash and soil-cement.

From a specific limited program for the evaluation of the economics of soil-stabilization, we have now become sufficiently conversant with the principles involved to be confident to undertake a variety of stabilization projects.

There appears to be a growing awareness of the benefits to be derived from the various stabilization methods available and the techniques are becoming more widely used.

(d) *Frost Heaving*

Correlation of field information with the tests on samples taken remains necessary for the determination of the extent of field work required in order to conclude previous investigations. Meanwhile an attempt to minimize or control frost heaving by chemical treatment of the subgrade was initiated.

As it is a costly operation to excavate at frost heave locations, and refill with better material, it was decided to carry out a field trial in the Huntsville area.

Some degree of success has been experienced by using Lignosol. Two heaves were treated in October by injecting the liquid Lignosol into the subgrade, and periodic examinations were made during the winter. The performance of the areas, under the existing conditions of the winter, were satisfactory and it now remains to assess the life of the treatment by maintaining an annual check of the areas treated.

Upon the expiration of another season's weathering, a report will be compiled outlining the method of treatment and its effects.

Courses of Instruction

Continuing with the established program for engineers-in-training, four groups of five engineers were assigned for ten-week periods to the Materials and Research Section. The schedule for each group covered all phases of laboratory testing, participation in our courses of instruction conducted for Department and municipal personnel, and observation of field operations as far as the season permitted.

In addition to courses established by this section, senior personnel presented papers on asphalt, concrete, soils and foundations as related to highway construction at two junior and one senior instrumentmen's courses, special courses at Fort William and Kenora, and three road design schools.

Informative tours of the laboratory were conducted for a number of visitors, including highway construction officials from Russia, students of the Colombo Plan, groups of new graduate engineers and delegates to the Canadian Technical Asphalt Association.

The following annual courses held by the Section to aid in training Department personnel were presented by senior staff. Bracketed figures indicate the attendance at each course.

59-201. Soils Inspectors — Beginners (42)

For personnel who had not been previously engaged in grading inspection, but would soon be so assigned. Soils identification, classification and material sampling were covered with emphasis on compaction.

59-202. Soils Inspectors — Advanced (27)

Eligible personnel were those who had attended a previous beginners soils inspectors' course and had been actively engaged in material sampling and field compaction control. Soils identification and classification principles of an advanced nature were expounded and time was allotted for discussion of soils inspection problems.

59-203. Concrete Inspectors — Beginners (38)

Department inspection personnel having little or no concrete inspection experience were accepted. Elementary aspects of concrete technology and inspection with emphasis on field quality control of concrete were the two major topics.

59-204. Asphalt Inspectors — Beginners (35)

Designed for personnel with negligible bituminous inspection experience. Duties and responsibilities of an asphalt inspector, materials control, testing methods and their related significance, combined with a field trip to observe an asphalt plant in operation, were the main subjects presented.

59-205. Asphalt Inspectors — Advanced (44)

Primarily for personnel who had previously attended a beginners' course, or had limited experience on bituminous paving projects.

As in previous years, several equipment manufacturers and distributors very generously co-operated by presenting films on major units of construction equipment related to the bituminous paving field.

59-206. Concrete Inspectors — Advanced (43)

This was the first advanced course and was restricted to personnel who had previously received preliminary tuition or had several years' experience in the concrete field. The course covered advanced concrete technology and inspection, including mix design theory, construction practice, concrete testing and performance. Personnel from the counties of Simcoe, Peel and Peterborough also attended. A feature of both concrete courses, non-Department lecturers dwelled on prestressed concrete and conducted visits to prestressed concrete and ready-mix plants.

59-207. Municipal Asphalt Inspectors (40)

A new venture in courses of instruction, it was evolved by the Operations Branch, the Municipal Roads Branch and the City Engineers' Association. The intent was to bring together representatives of cities, towns, townships and counties concerned with asphalt paving construction, so that exchange of information and better control would be possible. Those who attended were City Engineers, County and Township Road Department Engineers and Foremen.

59-208. Project Supervisors (35)

An advanced general course in concrete, bituminous and soil construction and control, restricted to Project Supervisors. Construction methods and quality control were reviewed with discussion periods for construction problems.

59-34. An Introductory Course in Soil Mechanics (68)

This course was similar to that presented by the Department of Extension, University of Toronto, and it continued for six weeks, one night per week. The principles, theory and practice of Soil Mechanics were covered. Engineers and senior technicians of the Operations Branch and the Planning and Design Branch attended.

Specifications:

Material Specifications were reviewed and revised for the following:—

1. Concrete pavement and concrete base.
2. Cement.
3. Coarse aggregates.
4. Fine aggregates.
5. Water.
6. Steel.
7. Subgrade moisture vapour barrier.
8. Burlap.
9. Load transfer devices.
10. Expansion joint filler and joint sealing compound.
11. Slag for granular base course.
12. Corrugated iron culvert pipe.



Paving operations on Highway 401. Placing concrete over reinforcing steel, Toronto District.

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1958-59

ROSS E. CLARKE, P.Eng.—Assistant Construction Engineer

On the east edge of the Ottawa City Limits, work continued on the east approach to the Ottawa Queensway.

The Ottawa Queensway is being constructed under an agreement of March 19, 1957, between Canada, Ontario, National Capital Commission (previously Federal District Commission), and the City of Ottawa.

On Stage 1, being from the east limits of the City to Hurdman's bridge, grading is now nearing completion with concrete paving contract scheduled for commencement late in 1959. On Stage 2, being from the west limits of the City to Carling Avenue, grading was started at Carling Avenue with the balance of work in the section scheduled to commence in 1959-60.

On Highway 15, grading and bridge reconstruction was carried out at Innisville and at Perth. From Perth to 7 miles west of Highway 38 is now to Trans-Canada Highway standards. Hot Mix Paving was completed on a section of Highway 7 from Highway 38 westerly.

At Peterborough, on the Trans-Canada Highway route which by-passes the business section, the construction of structures progressed, and at Lindsay and Orillia the Trans-Canada Highway By-passes were completed.

On Highway 103, the new section from Port Severn to Foote's Bay was completed, except paving at Port Severn. New bridges on the by-pass remain to be completed in the 1959-60 fiscal year.

On Highway 69 from Nobel to the Magnetawan River work progressed favourably.

On Highway 17 in the Sault Ste. Marie area, Trans-Canada Highway work was completed from Iron Bridge to Thessalon and on the Thessalon By-pass, with the exception of paving. Reconstruction to Trans-Canada Highway standards has started to the north of Sault Ste. Marie to connect with the section completed in the vicinity of Montreal River.

In the new section of Trans-Canada Highway 17, from Agawa River to Marathon, work has progressed to a point where access is possible from the southerly end to 25 miles north of Agawa River, and from the northerly end for a distance of 75 miles to a point 20 miles east of White River. A free ferry service was started at White Lake Narrows pending completion of a large structure at this point. Paving of this new "Gap" section of Trans-Canada Highway was started in the late summer at Marathon and White River. It is in this new section, that the Federal Government, under the Trans-Canada Highway agreement of July, 1956, is assuming 90% of the Trans-Canada Highway construction costs accruing after July, 1956.

On Highway 17 between Marathon and Fort William the major structure over the Little Pic was completed, along with structures at the Black River, Steel River, Prairie River, Stillwater Creek, North Trout Creek, and Black Sturgeon River. Grading to Trans-Canada Highway standards is in progress in the Cavers area (east of Nipigon) and in the Ouimet area (east of Fort William). At Cavers the reduction of a long, steep grade is part of the work.

To the west of Fort William on Trans-Canada Highway 17, the bridge and approaches at the Kaministiquia River was completed along with connections to the large Provincial Park at Kakabeka Falls immediately adjoining. Work is continuing north of Junction Highway 120 towards Raith.

Further to the west, Trans-Canada Highway 17 reconstruction continued east of Borup's Corners and in the Vermilion Bay area.

To the west of Kenora, Trans-Canada Highway 17 reconstruction continued from the Manitoba boundary easterly with paving of the first six miles east from the boundary being completed. At Kenora, construction of a new bridge over the Winnipeg River was started.

The total work completed to the end of the year was:

Grading and Culverts.....	746.90 miles
Bituminous Hot Mix Pavement.....	535.97 miles
Permanent Bridges and Structures built.....	71

Grading and Culverts

District	Hwy. T.C.H.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	Perth to Drummond.....	7.50	2.55	4.95
	15	1 mi. West of Bell's Corners.....	0.45	.....	0.45
Kingston	7	Perth to Bathurst.....	6.90	5.10	1.80
Huntsville	69	Nobel to Shawanaga.....	9.90	5.00	4.90
	69	South of Shawanaga North for 8.5 mi.....	8.50	4.50	4.00
	103	Moon River Revision.....	1.30	0.80	0.50
Sudbury	69	Pointe Au Baril to Magnetewan River.....	12.32	.....	3.80
	69	Magnetewan River approaches.....	0.61	.....	0.35
Sault Ste. Marie	17	Iron Bridge to Thessalon.....	14.80	.....	14.80
	17	Au Sable River approaches.....	0.60	.....	0.30
	17	Montreal River approaches.....	0.60	.....	0.60
White River Project 56-1	17	21.8 mi. to 33.8 mi. East of Marathon.....	12.00	3.00	9.00
	17	8.4 mi. East to 18.4 mi. East of White R... ..	10.00	4.00	6.00
	17	10 mi. North of Wawa to Wawa.....	10.00	6.00	4.00
	17	18.4 mi. East of White River Southerly.....	10.00	.....	7.00
	17	29 mi. North of Wawa Southerly.....	10.00	.....	7.00
	17	19.1 mi. North of Wawa Southerly.....	9.10	.....	3.00
	17	Wawa to Michipicoten River.....	13.00	.....	3.00
	17	Michipicoten River Southerly.....	6.00	.....	5.50
	17	25 mi. North of Agawa River, Southerly.....	10.00	.....	9.00
Fort William	17	15 mi. North of Agawa River Southerly.....	10.00	8.00	2.00
	17	Cavers Hill to Pays Platt.....	8.00	.....	3.80
	17	Raith South for 10.1 mi.....	10.10	.....	4.50
	17	Coldwater Creek to Moose Lodge.....	5.70	.....	4.60
	17	Ouimet to Coldwater.....	5.25	.....	1.40
	17	Rosspoint to Pays Platt.....	7.60	.....	0.60
	17	Pic River Bridge approaches.....	0.76	.60	0.16
Kenora	17	Red Rock Corners to Nipigon.....	6.72	1.50	5.22
	17	6.1 mi. East of Manitoba B'd'y Easterly....	6.10	.....	5.00
	17	5 mi. East of Hwy. 105 to 5 mi. West of Hwy. 105.....	10.00	.....	10.00
	17	7.8 mi. East of Borup's Corners Easterly....	8.50	3.00	5.50
	17	1.3 mi. East of Borup's Corners Easterly....	6.50	.....	6.50
	17	2.5 mi. West of Raleigh Easterly.....	9.93	.....	3.00
TOTALS.....			248.74	44.05	142.23

Bituminous Hot Mix

District	Hwy. T.C.H.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	Ashton Overhead approaches.....	0.53	.....	0.53
	15	1 mi. West of Bell's Corners.....	0.45	.....	0.45
Kingston	7	Perth to Bathurst.....	6.78	.....	6.78
	7	Hwy. 38 Westerly.....	7.10	.....	7.10
Port Hope	7	Oakwood Easterly.....	5.55	.....	5.55
	7	Lots 20 and 21 (Ops Twp.) Easterly	4.55	.....	4.55
Huntsville	12	South Orillia By-pass.....	3.03	.....	3.03
	103	Waubashene to Gibson River.....	17.27	.....	17.27
	103	Gibson River to Footes Bay	11.92	.....	11.92
Sault Ste. Marie	17	Iron Bridge to Thessalon.....	14.50	.....	14.50
	17	Sauble River vicinity.....	0.60	.....	0.60
White River Project 56-1	17	10.4 mi. West of White River Easterly.....	19.20	.....	3.00
Fort William	17	Marathon Road Easterly.....	16.90	.....	14.65
	17	Kakabeka Village to Hwy. 590.....	1.60	.....	1.60
Kenora	17	Manitoba Boundary Easterly.....	6.10	.....	6.10
			116.08		97.63

Granular Base (New Grading)

Ottawa	15	Perth to Drummond Centre.....	7.50	1.35	6.15
	15	Cyrville Road Bridge.....	0.50	.....	0.50
	15	1 mi. West of Bell's Corners.....	0.45	.....	0.45
Kingston	7	Hwy. 38 Westerly.....	7.10	.....	7.10
	7	Perth to Bathurst.....	6.90	.....	6.90
Port Hope	7	Oakwood Easterly.....	5.55	.....	5.55
	7	Lots 20 and 21 (Ops Twp.) Easterly	4.55	.....	4.55
Sudbury	69	Pointe-au-Baril to Magnetewan River.....	12.32	.....	3.80
	69	Magnetewan River approaches.....	0.61	.....	0.35
Sault Ste. Marie	17	Thessalon By-pass.....	3.50	.....	3.50
White River	17	10 mi. East of Marathon to 21.8 mi. East of Marathon	11.80	4.20	7.60
Project 56-1	17	33.8 mi. East of Marathon to 10.6 mi. West of White R.	11.40	9.20	2.20
	17	White River to 8.4 mi. East of White R.....	8.40	7.00	1.40
	17	8.4 mi. East to 18.4 mi. East of White R.....	10.00	.....	10.00
	17	18.4 mi. East to 28.4 mi. East of White R.....	10.00	.....	3.00
	17	10 mi. North of Wawa to Wawa Road.....	10.00	.....	10.00
	17	Wawa Road to Michipicoten River.....	3.00	.....	3.00
	17	25 mi. North of Agawa River Southerly.....	10.00	.....	4.50
	17	15 mi. North of Agawa River Southerly.....	10.00	.....	10.00
	17	5 mi. North of Agawa River to Agawa R.....	5.00	.....	5.00
	17	Crossing of Kaministikwia and Hydro Aqueducts.....	1.00	0.80	0.20
Fort William	17	Raith South for 10.1 mi.....	10.10	.....	1.10
	17	Coldwater Creek to Moose Lodge.....	5.70	.....	3.80
	17	Ouimet to Coldwater.....	5.25	.....	0.30
	17	Rosspoint to Pays Platt	7.60	.....	1.50
	17	Red Rock Corners to Nipigon.....	6.72	.....	6.72
Kenora	17	6.1 mi. East of Manitoba B'd'y Easterly....	6.10	.....	1.50
	17	5.0 mi. East of Hwy. 105 to 5 mi. West of Hwy. 105.....	10.00	.....	10.00
	17	7.8 mi. East of Borup's Corners Easterly....	8.50	.....	8.50
	17	1.3 mi. East of Borup's Corners Easterly....	6.50	6.50
	17	2.5 mi. West of Raleigh Easterly.....	9.93	2.00

TOTALS.....	215.98	22.55	137.67
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New Bridges

District	Hwy. T.C.H.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	Mississippi River at Innsville			
	15	Cyrville Road Bridge over No. 17			
Port Hope	17	Scugog River Bridge			
Huntsville	11 & 12	South Orillia Underpass			
	103	Muskoka River Bridge			
	103	Matchedash Bay			
	103	C.N.R. Overhead			
	12	C.N.R. Overhead			
Sault Ste. Marie	17	Sauble River Bridge			
	17	Blind River Bridge			
	17	C.P.R. Overhead, Thessalon			
	17	Thessalon River Bridge			
	17	Montreal River Bridge			
White River Project 56-1	17	C.P.R. Overhead — 8.4 miles East of White River			
	17	Depew River Bridge — 7.4 miles East of White River			
	17	White River Bridge at Bremner			
	17	C.P.R. Overhead at Manitouwagege			
	17	Cedar Creek — 23.6 miles East of Marathon			
Fort William	17	Black River Bridge — East of Heron Bay			
	17	Little Pic — West of Marathon			
	17	Steel River Bridge — West of Marathon			
	17	Prairie River Bridge — West of Marathon			
	17	Stillwater Creek — West of Nipigon Creek			
	17	North Trout Creek — 7 miles West of Nipigon Creek			
	17	Black Sturgeon Bridge			
	17	Kakabeka Falls Bridge			
Kenora	17	Eagle River Bridge — 12 miles West of Oxdrift			

Total of 27 New Bridges



Late in February 1958 men and equipment were flown by helicopter to the Baldhead River to make soil tests so that plans could be made for two bridges over the Baldhead on the Trans-Canada Highway.

MINING, ACCESS AND RESOURCES ROADS REPORT, 1958-59**ROSS E. CLARKE, P.Eng., Secretary*****Mining and Access Roads Committee (Interdepartmental)***

The fund for this work, which was voted by Legislature in the Department of Mines estimates, was administered by a Committee consisting of the Provincial Treasurer as Chairman; Minister, Department of Highways; Minister, Department of Mines, and Minister, Department of Lands and Forests.

The work carried out this year consisted of completion of Access Roads started previously and the starting of certain roads known as "Resources Roads."

Resources Roads construction is being financed jointly between the Federal Government and the Province of Ontario except where a particular interest benefits, in which case the cost of construction is being shared three ways. Although the formal agreement between the Province and Canada has not been signed, certain roads have been approved for construction. The Department of Highways has been delegated to act on behalf of the Province through the Mining and Access Roads Committee.

The more important highlights of the Mining, Access, and Resources Roads work are:

New Liskeard District:*Resources Road — Foleyet to Chapleau*

Starting in December, 1958, from Foleyet south-westerly, 14 miles were cleared by day labour forces in preparation for construction by contract of 10 miles next fiscal year.

Cochrane District:*Access Road — Highway 11 to Hornepayne*

The road was completed in August, 1958, by the Department's Asphalt Plant organization and district forces despite delay caused by a rainy season. At Nagagamisus Narrows a temporary structure was constructed with the intention of erecting a permanent bridge by district forces in 1959-60.

Sault Ste. Marie District:*Resources Road — Foleyet to Chapleau*

Starting in January, 1959, from Chapleau north-easterly, $8\frac{1}{2}$ miles of a 12-mile project were cleared by day labour forces in preparation for construction by contract including balance of clearing in the coming fiscal year.

Fort William District:*Access Road — Geraldton to Nakina*

This was completed and consisted of reconstructing the old original 9 miles from Geraldton north and improving last year's work from Mile 12 to 23 and from Mile 34 to 42.

Access Road — Highway 11 to Caramat

Work was completed and consisted of reconstructing the old original 4 miles from Highway 11 south and improving last year's work on the balance.

Resources Road — Highway 17 (East of Port Arthur) to Cheeseman Lake

From Highway 17 to 30 miles north, clearing was commenced on February 1, 1959, under a contract that also includes complete construction. The Abitibi Power and Paper Company is sharing in the cost of this construction.

Resources Road — Nakina to Cavell to Durer Lake

For the 34 miles on the section from Cavell north, between January and March, 1959, a winter haul road was constructed with the intention of completely constructing this section by contract in 1959. The section from Nakina to Cavell is to be constructed later. On the section from Cavell North the Anaconda Iron Ore (Ontario) Ltd. is sharing in the cost of construction.

Mining and Access Roads, 1958-59**Financed Entirely by the Province**

District	Location	Year Begun	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Miles to Compl.
Cochrane	Hwy. 11 to Hornepayne..	1955	43.0	30.0	13.0	.....
Port Geraldton to						
William Nakina.....		1954	43.0	28.8	14.2	.....
	Hwy. 11 to Caramat.....	1955	20.0	16.0	4.0	.....
TOTALS.....			106.0	74.8	31.2	...

Resources Roads 1958-59**Financed Partially by the Province**

New Liskeard	} Foleyet to Chapleau	1958	59.2	.....	.....	59.2
Sault Ste. Marie						
Port William	Hwy. 17 to Cheeseman Lake.....	1959	73.6	.....	.....	73.6
	Nakina to Durer Lake (Cavell North Section)	1959	34.0	.....	.....	34.0
TOTALS.....			166.8	.....	.....	166.8



Clearing for the Foleyet to Chapleau resources road was undertaken in the winter of 1958-59 as a day labour project. The above picture shows this road three miles west of Foleyet in August, 1959.



Paving Highway 98 east of Tilbury, Chatham District.



Equipment at work on Grading and Culvert contract 58-126, on Highway 98 east of Merlin, Chatham District.

DISTRICT No. 1—CHATHAM**G. U. HOWELL, P.Eng., District Engineer****Construction**

The fiscal year 1958-1959 saw the official opening on June 9, 1958, of the Windsor-Tilbury Section of Highway 401. This 31-mile section involved an expenditure in excess of \$13,000,000 and required more than 909,000 sq. yds. of concrete. The section from Tilbury to interchange at Highway 98 had been opened to traffic about July 1, 1956. The remaining portion of Highway 401 known as the Windsor entrance, a distance of 4.96 miles, was not completed until late Spring of 1958. The Windsor entrance, consisting of two legs, provides a direct route to Highways 3 and 3B, simplifies access to Windsor, Ambassador Bridge and Windsor-Detroit Tunnel.

Highway 39 from about Tecumseh West limits to Jefferson Boulevard, 2.01 miles east of Windsor East limits, consisting of 18-foot wide concrete pavement with asphalt top was widened with concrete to a 48-foot width with asphalt top also concrete curb and gutter for the entire distance. The widening of the Little River Bridge 25 feet on the south side was included in this contract to fit the new 48-foot wide road surface.

This year concluded the 17 miles of widening of Highway 7 from 20 feet to 36 feet wide road surface, terminating at the junction of Highway 7 and Highway 402, 1.3 miles east of Sarnia east limits.

Maintenance

We received two reversible plows for 3-ton trucks which proved very satisfactory in cleaning off the legs of the overpasses in that the snow did not have to be carried across the pavement but could be plowed off each side. Last winter was unusual for the District as it was much colder and not so much freezing and thawing, with more snow which kept the plows, salting and sanding crews quite busy.

Patching of asphalt pavements was carried out under general maintenance, and 2 hot mix patching contracts under Maintenance Supervision were carried out. Also a hot mix paving contract under Maintenance was in progress.

Bridge painting contract was in progress and also the District's first highway lighting contract in the Windsor area at the interchanges was looked after by the District maintenance electrical forces.

A start was made on the installation of new weigh scales on King's Highway 7 approximately 19 miles east of Sarnia.

Official opening of King's Highway 401 from Tilbury to Windsor; also official opening of the Chatham By-pass.

An 8-foot square concrete culvert on Highway 3 was in the process of collapsing and had been braced up by Department Patrol Forces; two contracts were let for the installation of corrugated iron pipe which was installed in two-foot sections and braces taken out as work progressed. The space between the pipe and the culvert was then filled by grout.



Junction of Highways 401 and 3, facing west, showing completed structures and paving, Chatham District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
2	Chatham By-pass.....	1.72	1957	.....	1.72
39	Banwell Rd. to Jefferson Blvd.....	2.60	1958	.....	2.60
98	Blenheim to Charing Cross.....	5.00	1958	.....	5.00
98	Charing Cross to Merlin.....	9.60	1958	.....	3.00
TOTAL.....					12.32

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
2	Chatham By-pass.....	1.72	1957	.....	1.72	36,188
7	Perch Creek (Jct. 7 and 402) east.....	7.66	1956	6.50	1.16	51,172
39	Banwell Rd. to Jefferson Blvd.....	2.60	1958	.....	2.60	39,407
98	Blenheim to Charing Cross.....	5.00	1958	.....	5.00	115,372
98	Charing Cross to Merlin.....	9.60	1958	.....	3.00	145,540
TOTALS.....					13.48	387,679

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
98	Merlin to Tilbury.....	10.30	1958	.....	10.30	190,789

Crushed Gravel and Stone on Roads by Contracts

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
2	Chatham By-pass.....	1.72	1,651
39	Banwell Rd. to Jefferson Blvd.....	2.60	5,043
98	Blenheim to Charing Cross (1,480 tons stockpiled not included).....	5.0	3,045
98	Merlin to Tilbury.....	10.3	18,038
	Pelee Island.....	6.0	33,858
TOTALS.....		25.62	61,635



Facing east on Highway 39 at Riverside, paving contract 57-298, Chatham District.

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Total Tons Placed 1958-59	Pavement Width Feet
2	Chatham By-pass..... (Co. 48 mi. bit. resurfacing of old pavement)	1.72	1957	.....	1.72	19,288	44
39	Banwell Rd. to Jefferson Blvd..... (includes asphalt tonnage)	2.60	1958	.....	2.60	40,815	48
TOTALS.....					4.32	60,103	

Concrete Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Square Yards Placed 1958-59	Pavement Width Feet
2	Chatham By-pass.....	1.24	1957	.....	1.24	31,283	44
39	Banwell Rd. to Jefferson Blvd.....	2.60	1958	.....	2.60	49,603	48
TOTALS.....					3.84	80,886	

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
7	Perch Creek (Jct. 7 and 402) east	7.66	1956	.....	7.66	18,008
98	Blenheim to Charing Cross.....	5.00	1958	.....	5.00	17,061
98	Charing Cross to Merlin.....	9.60	1958	.....	9.60	6,340
98	Merlin to Tilbury.....	10.30	1958	.....	10.30	32,719
TOTALS.....					22.96	74,128

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
	Peele Island	6	21,000	1,000

Bituminous Resurfacing of Old Pavements

Hwy. No.	Location	Miles Done 1958-59	Tons Placed 1958-59
3	Wheatley Jct. Hwy. 401 and Hwy. 3.....	.....	.....
7	Jct. Hwys. 7 and 22 to Jct. Hwys. 7 and 82.....	.....	.....
18	Harrow to Kingsville.....	.....	.....
21	Jct. Hwys. 21 and 82 to Grand Bend.....	.....	.....
82	Jct. Hwys. 7 and 82 to Jct. Hwys. 21 and 82.....	3.0	3,010
2	Chatham By-pass.....	0.48	3,786
3	Windsor to Maidstone.....	1.2	1,200
18	Harrow to Kingsville.....	2.0	2,000
3	Wheatley Vicinity.....	0.6	600
7	Jct. Hwys. 7 and 22 to Jct. Hwys. 7 and 82.....	3.0	3,000
82	Jct. Hwys. 7 and 82 to Jct. Hwys. 82 and 21.....	1.0	1,000
21	Jct. Hwys. 82 and 21 to Grand Bend.....	4.0	4,000
82	Jct. Hwys. 7 and 82 to Jct. Hwys. 82 and 21.....	2.6	2,661
TOTALS.....		17.88	21,258

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Bridge or Structure
39	Little River, Sandwich East Township.....	1958	1958	Rigid Frame

Automatic Signals at Railway Crossing

Hwy. No.	Railway	Location	Short Arm Bell
2	C.N.R.	Kent County, Highway 2, Village of Thamesville.....	X

Totals of Other Work Done on District No. 1

Item	Number or Amount	Total Tons	Total Miles
Bridges painted.....	19	.....	.....
Calcium dust layer on gravel roads.....	.....	45	6
Off-road parks maintained.....	6	.....	.....
Roads snowplowed and kept open, King's Highways.....	18	.....	572
Roadside picnic places maintained.....	90	.....	.....
Routine maintenance, King's Highways.....	.....	.....	566
Routine maintenance, Secondary Highways.....	.....	.....	6
Salt for de-icing roads (raw).....	.....	6,474	566
Sand for winter maintenance.....	.....	1,168	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	510,686	.....	.....
Shrubs received and planted this year.....	5,405	.....	.....
Signs erected or replaced.....	5,232	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	39
Snow hedges planted this year.....	.....	.....	1.5
Traffic lights installed this year.....	3	.....	.....
Zone painting on King's Highways.....(gals.)	6,235	.....	570

DISTRICT No. 2—LONDON**W. L. FRASER, P.Eng., District Engineer****Construction**

During this construction season two dangerous locations were eliminated by the completion of the C.N.R. overhead at Creditville, Highway 2, and the St. Thomas N.Y.C. overhead on Highway 3. The reconstruction program included the completion of Highways 2 and 4, London to Lambeth, Highway 2 in the Town of Paris, Highway 22 from Lobo to Hickory Corners, Highway 7 westerly from Parkhill, grading of Highway 19 from Tillsonburg to Mt. Elgin, an overhead structure over Highway 401 at the Tower Line Road and another at Tempo.

Maintenance

Severe winter conditions combined with one of the coldest winters on record for the London area resulted in high winter maintenance costs and caused heavy damage to the roads during the spring break-up. Several miles of highway were surface treated during the summer months. During the latter part of December a considerable amount of stone chips was lost. It was difficult to determine the reason for this but it was decided to reduce the size of stone chips used from $\frac{3}{8}$ inch to $\frac{1}{4}$ inch for any surface treatment to be carried out in 1959-60.



Highway 3 just west of Tillsonburg showing new bridge over Otter Creek, London District.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59
2	Creditville C.N.R. overhead.....	1.00	1957	0.2	0.80
2	Paris Hill Jct. 24A westerly.....	0.64	1958	.....	0.64
2	Thames River at Delaware.....	2.40	1958	.....	2.40
2, 4	London to Lambeth.....	5.00	1958	.....	5.00
3	St. Thomas N.Y.C. overhead.....	1.00	1957	0.7	0.30
3	Stoney Creek bridge and approaches.....	0.20	1957	0.1	0.10
7	Intersection Hwys. 7 and 81.....	1.76	1958	.....	1.76
19	Tillsonburg to Mt. Elgin.....	6.60	1957	0.5	6.10
19	Tillsonburg to connecting link and 1 mi. north of Salford.....	0.80	1958	.....	0.80
22	Calamity Corners to Lobo.....	6.11	1958	.....	6.11
22	Lobo to Hickory Corners.....	7.50	1957	2.2	5.30
135	Wellington Rd. to Hwys. 2 and 4.....	3.02	1958	.....	3.02
401	Norwich Rd.....	0.33	1958	.....	0.19
TOTALS.....		36.36		3.70	32.52

Granular Base Laid on New Grading

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
2	Junction of Hwy. 24A at Paris westerly.....	0.64	1958	.....	0.64	17,713
2, 4	London to Lambeth.....	5.0	1958	.....	5.00	177,121
3	1 mi. east of St. Thomas N.Y.C. overhead.....	1.0	1957	0.80	0.20	17,527
7	Intersection of Hwys. 7 and 81 at Parkhill.....	1.76	1958	.....	1.76	48,718
19	Tillsonburg to Mt. Elgin.....	6.6	1957	0.40	6.20	210,977
19	Tillsonburg to Mt. Elgin.....	7.4	1958	.....	3.18	3,404
22	Calamity Corners to Lobo.....	6.11	1958	.....	5.01	126,700
22	Lobo to Hickory Corners.....	7.50	1957	2.20	5.30	168,876
135	Wellington Rd. to Hwys. 2 and 4..	3.02	1958	.....	2.87	78,387
401	Westminster Twp. bridge at Tempo.....	0.46	1957	.....	0.46	19,863
TOTALS.....		39.49		3.40	30.62	869,286



New grade on Highway 19, one-quarter mile north of Tillsonburg, London District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
2	Creditville C.N.R. overhead.....	1.00	3,530
2, 4	London to Lambeth.....	5.00	29,026
3	Stoney Creek Bridge and approaches.....	0.19	389
3	N.Y.C. overhead 1 mi. east of St. Thomas.....	0.50	2,255
7	Intersection of Hwys. 7 and 81 at Parkhill.....	1.76	2,400
19	Port Burwell to Tillsonburg.....	16.40	8,080
19	Tillsonburg to Mt. Elgin.....	6.55	7,576
22	Hickory Corners to Lobo.....	7.50	42,040
24	From Simcoe to 1.2 mi. north of Waterford.....	8.98	8,827
75, 76, 77	From Hwy. 3 to Dutton — to West Lorne — to Rodney.....	9.60	8,600
123	East limits of St. Thomas to Hwy. 3.....	1.16	945
135	Wellington Rd. to Hwys. 2 and 4.....	2.27	4,800
401	Westminster Twp. Bridge No. 18 at Tempo.....	0.46	774
TOTALS.....		61.37	119,242

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
80	Walkers Corners to Alvinston.....	5.4	4,100
81	Hwy. 22 to Hwy. 7.....	15.6	10,400
TOTALS.....		21.0	14,500

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
2	Junction of Hwy. 24A at Paris westerly.....	0.64	1958	....	0.64	5,548
2	C.N.R. overhead at Creditville....	1.00	1957	....	1.00	4,837
3	Stoney Creek Bridge and approaches.....	0.19	1957	....	0.19	948
3	N.Y.C. overhead 1 mi. east of St. Thomas.....	1.00	1957	0.5	0.50	5,115
2, 4	London to Lambeth.....	5.00	1958	....	5.00	43,590
7	Intersection of Hwys. 7 and 81 at Parkhill.....	1.76	1958	....	1.76	5,976
22	Hickory Corners to Lobo.....	7.50	1957	....	7.50	29,708
401	Westminster Twp. Bridge, Bridge 18 (Tempo).....	0.46	1957	....	0.46	1,644
TOTALS.....		17.55		0.5	17.05	97,366

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
80	Walkers Corners to Alvinston.....	5.4	16,175	436.05*
81	Hwy. 22 to Hwy. 7.....	15.6	42,463	1,219.80
TOTAL.....		21.0	58,638	1,655.85

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
19	Port Burwell to Tillsonburg.....	16.40	39,129
24	Simcoe to 1.12 mi. north of Waterford.....	8.98	22,040
75, 76, 77	Hwy. 3 to — Dutton — to West Lorne — to Rodney.....	4.36	12,650
123	East limits of St. Thomas to Hwy. 3.....	1.16	1,704
TOTALS.....		30.90	75,523

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used	Tons Chips Used
3	Wallacetown to Iona.....	5.3	18,658	812.0
3	Tillsonburg east to Harvey.....	1.3	4,576	199.1
3	St. Thomas to Aylmer.....	9.0	31,683	1,378.6
3	Iona to Sheddon.....	4.2	14,785	643.5
4	Lambeth to St. Thomas.....	10.5	36,963	1,608.4
73	Hamilton Road to Harrietsville.....	5.5	19,362	842.6
TOTALS.....		35.8	126,027	5,484.2

Bridges Built

Hwy. No.	Location	Type
3	Stoney Creek, culvert at Tillsonburg, Dereham Twp...	Reinforced concrete, double box
22	Oxbow Creek, bridge at Melrose.....	Reinforced concrete, rigid frame
401	Westminster Twp., Bridge 18.....	Reinforced concrete

Totals of Other Work Done on District No. 2

Item	Number and Amount	Total Tons	Total Miles
Bridges painted.....	3	.....	.....
Calcium dust layer on gravel roads.....	.....	47	21.46
Off-road parks maintained.....	5	.....	.....
Roads snowplowed and kept open, King's Highways.....	All	.....	543
Roadside picnic places maintained.....	132	.....	.....
Routine maintenance, King's Highways.....	.....	.....	543
Routine maintenance, Secondary Highways.....	.....	.....	.....
Salt for de-icing roads (raw).....	.....	19,990	496
Salt in sand, stockpiled.....	.....	754	.....
Sand for winter maintenance.....	.....	51,000	.....
Scale houses maintained.....	1	.....	.....
Seeding by Department's Forces.....(sq. yds.)	19,602,000	.....	.....
Shrubs received and planted this year.....	5,464	.....	.....
Signs erected or replaced.....	5,431	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	82.75
Snow hedges planted this year.....	.....	.....	1.5
Traffic lights installed this year.....	1	.....	.....
Weed control.....(gals.)	487	.....	543
Zone painting on King's Highways.....(gals.)	5,720	.....	663

DISTRICT No. 3—STRATFORD**L. D. BARRETT, P.Eng., District Engineer****Construction**

During the fiscal year ending March 31, 1959, work was completed on eight carry-over contracts and three new contracts. One carry-over contract and two new contracts were started but not completed.

Grading, culverts and granular base were completed on the following highways: Highway 21, Bayfield to St. Joseph; Highway 86, Wingham to 3.5 miles east of Bluevale, including a diversion by-passing the Village of Bluevale, eliminating two old, narrow, steel structures and four sharp curves; Highway 86, Elmira easterly to 1.2 miles east of Zuber's Corners. This contract included a diversion by-passing the Village of West Montrose eliminating several sharp curves and steep grades; and Highways 24 and 51, Erin to Caledon.

Grading, culverts, granular base and hot mix paving were completed on: Highway 8, Seebach's Hill to Mitchell; Highway 9, Arthur westerly 9.9 miles; and Highway 7, Kitchener to Breslau. Grading, culverts and one base course completed.

Hot mix paving was done on Highways 7 and 8, New Hamburg diversion, and Highway 86, Molesworth westerly 6.5 miles.

Resurfacing Highway 21, Kincardine south, was started. This was a late call for tenders therefore only a short section of base course was completed.

Structures and approaches included a concrete culvert on Highway 23 in the Village of Bornholm, improving an intersection and drainage.

A concrete bridge was constructed over the West Credit River on Highway 24 and another over the Grand River on Highway 86, West Montrose Diversion.



Bridge construction at West Montrose on Highway 86 over Grand River, Stratford District.

Two concrete structures were constructed over the Canadian Pacific Railway and Credit River. The approaches to structures will not be completed and open for traffic until 1959. A concrete structure was completed on Highway 21 at St. Joseph. This structure included a concrete flume in an effort to control erosion.

The Diversion and Structure at West Montrose was not opened for traffic.

Maintenance

The winter maintenance program was hampered by severe weather conditions and adverse winds which required constant surveillance by the Patrols. Only on two occasions were some roads blocked and then only for a few hours.

Due to a completion of bridge painting in 1957 no new contracts were required for this work for this year. Department forces can carry out the necessary work next year.

Gravel was applied to all gravel roads prior to the spring breakup and calcium chloride was spread as soon as possible thereafter. The result was an early bonding of these roads with little loss of fine material from traffic movement. Priming was then carried out with good results.

Roadside tables were well patronized during the summer, especially in resort areas where more picnic sites are being established. The weed spraying program of past years has produced such good results that no spraying was required this year. Weeds are fewer than ever before allowing for improved grass cutting operations.

There was a considerable increase in seeding over last year, and as the period of time when seeding work can be carried out is limited at least two machines are required on this District.

Four new salt sheds were erected and construction started on two more. These sheds are much appreciated as they speed up the application of salt when required and effect a considerable saving in the cost of bulk salt over bag salt.

No traffic lights were installed but the following illuminated signals were erected: three red flashers on stop signs, six flashers and two flood lights at channelizations, and eight mercury vapour street lights.

Zone painting was found to be quite effective except on sharp curves where a further application was required in the fall.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
7	Kitchener east to Breslau.....	3.3	1957	.....	3.30
9	Arthur west 9.9 mi.....	9.9	1957	3.5	6.40
86	Elmira east 5.8 mi.....	5.8	1957	4.9	0.90
21	Bayfield to St. Joseph.....	10.5	1957	5.8	4.70
24, 51	Erin to Caledon.....	6.7	1957	3.1	3.60
86	Wingham east.....	7.7	1957	4.3	3.40
23	Bornholm Culvert.....	0.43	1958	.....	0.43
TOTALS.....		44.33		21.6	22.73

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
7	Kitchener east to Breslau.....	3.3	1957	.....	3.30	170,350
9	Arthur westerly.....	9.9	1957	3.5	6.40	249,974
9	Mallett River bridge.....	.....	1957	.....	.....	2,662
86	Elmira easterly.....	5.8	1957	0.3	5.50	247,049
21	Bayfield to St. Joseph.....	10.5	1957	0.05	10.45	82,220
24, 51	Erin to Caledon.....	6.7	1957	0.05	6.65	381,000
86	Wingham east.....	7.7	1957	0.07	7.63	239,365
21	St. Joseph Culvert.....	0.05	1958	.....	0.05	238
86	West Montrose bridge.....	0.10	1958	.....	0.10	9,210
51	C.P.R. overhead bridge, Credit River bridge to west of Caledon.....	0.70	1958	.....	0.35	150,450
7, 8	New Hamburg diversion	6.3	1958	.....	6.30	17,568
TOTALS.....		51.05		3.97	46.73	1,550,086

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
23	Bornholm Culvert.....	0.43	1958	.....	0.43	3,479
21	Kincardine south for 24.99 mi....	24.99	1958	.....	.....	2,190
TOTALS.....		25.42		.....	0.43	5,669



Bridge on Highway 9, at Mallet River south of Teviotdale, Stratford District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
7	Kitchener east to Breslau.....	3.3	5,216
9	Arthur westerly 9.9 mi.....	9.9	13,560
9	Mallett River bridge.....		619
86	Elmira easterly.....	5.8	3,677
21	Bayfield to St. Joseph.....	10.5	32,292
24, 51	Erin to Caledon.....	6.7	12,355
86	Wingham east.....	7.7	23,463
7, 8	New Hamburg diversion.....	6.3	30,084
21	Kincardine south 24.99 mi.....	24.99	1,575
8	D.H.O. Weigh Scales at Holmesville.....		880
86	Molesworth westerly.....	6.5	810
100	Thamesford to Hwy. 7.....		14,987
97	South of Plattsville to 4.0 mi. west of Galt.....		4,996
24	Junction of Hwy. 51 to Orangeville.....		4,999
7	Vicinity of Prospect Hill.....		4,990
24	Vicinity of Erin.....		7,998
86	Vicinity of Lucknow.....		4,999
7, 8	Vicinity of Stratford and New Hamburg.....		14,994
86	Elmira to West Montrose and Macton.....		9,999
4	Blyth to Wingham.....		4,993
23	Junction of Hwy. 7 to Listowel.....		9,994
TOTALS.....		81.69	207,480

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
4	Exeter to Clinton.....	17	1,080
4	Wingham to 3 mi. south of Wingham.....	3	150
7	Stratford to Elginfield.....	21	1,860
7, 8	Stratford to Baden.....	19	1,100
8	Stratford to 5 mi. west of Stratford.....	5	880
21	Bayfield to 3 mi. north of Goderich.....	15	2,000
23	Russeldale to Listowel.....	28	3,650
24	Guelph to Erin.....	20	4,750
24	Junction Hwys. 24 and 51 to Orangeville.....	8	4,900
83	Exeter to Brewster.....	13	300
86	Junction Hwys. 7 and 86 to 5 mi. west of Elmira.....	14	6,850
86	Junction Huron Co. Rd. 12 and Hwy. 86 to Wingham.....	11	8,000
86	Lucknow to 6 mi. west of Lucknow.....	6	1,500
97	4 mi. west of Galt to Plattesville.....	12	9,500
100	Thamesford to Junction Hwy. 7 and 100.....	15	9,400
TOTALS.....		207	55,920

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
6	Guelph to Fergus.....	9.9	1957	2.5	7.40	3,900
7	Kitchener east to Breslau.....	3.3	1957		1.60	11,720
8	2.5 mi. east to Mitchell.....	0.41	1958		0.41	519
8	D.H.O. weigh scales at Holmesville.....		1958			355
9	Arthur westerly 9.9 mi.....	9.9	1957		9.90	25,848
7, 8	New Hamburg Diversion.....	6.3	1958		6.30	28,927
23	Village of Bornholm.....	0.43	1958		0.43	193
86	Molesworth westerly.....	6.5	1957	6.0	0.50	3,536
TOTALS.....		36.74		8.5	26.54	74,998

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
97	Plattsville south to Blackhorse Corner.....	8.3	27,390	447
100	Thamesford to Hwy. 7.....	15.0	48,150	922
86	Bluevale east 3.0 mi.....	3.0	9,000	188
86	5.7 mi. east of Dorking to Hwy. 7.....	14.5	42,366	884
24	Junction Hwy. 51 to Orangeville.....	7.3	21,597	452
97	Blackhorse Corner to 4.0 mi. west of Galt.....	4.0	11,766	215

Construction

9	Arthur west 9.9 mi.....	9.9	20,860	520
9	Mallett River bridge.....		1,934	26
86	Elmira easterly.....	5.8	20,913	572
21	Bayfield to St. Joseph.....	10.5	40,810	830
86	Wingham east to Contract 55-87.....	7.7	27,212	549
TOTALS.....		86.0	271,998	5,605

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
21	Kincardine south for 24.99 mi.....	2.0	5,410

Bridges Built

Hwy. No.	Location	Type
9	Mallet River Bridge 7 mi. east of Palmerston.....	Rigid frame concrete
86	West Montrose Bridge, Grand River at West Montrose.....	Concrete beam span
24	West Credit River Bridge, Erin.....	Rigid frame concrete
51	C.P.R. Overhead Bridge, west of Caledon.....	Concrete piers and deck
51	Credit River Bridge, west of Caledon.....	Rigid frame concrete



Four miles north of Wingham on Highway 4, showing a portion of completed resurfacing, Stratford District.

New Buildings

Hwy. No.	Location	Type	Completed
19	Milverton Patrol Yard.....	Salt shed	1958
19	Hickson Patrol Yard.....	Salt shed	1958
23	Mitchell Patrol Yard.....	Salt shed	1958
83	Grand Bend Patrol Yard.....	Salt shed	1958
8	Holmesville.....	Weigh scales	1958

Totals of Other Work Done on District No. 3

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		310	86
Roads snowplowed and kept open, King's Highways.....	18		622.4
Roadside picnic places maintained.....	301		
Routine maintenance, King's Highways.....			622.4
Salt for de-icing roads (raw).....		10,870	536
Salt in sand, stockpiled.....		2,025	
Sand for winter maintenance.....		72,900	
Scale houses maintained.....	1		
Seeding by Department's Forces.....(sq. yds.)	2,981,000		
Shrubs received and planted this year.....	3,886		
Signs erected or replaced.....	1,532		
Snow fence erected, dismantled, stored.....			170
Zone painting on King's Highways.....(gals.)	4,620		553



Grading on the Bluevale Diversion, Highway 86, Stratford District.

DISTRICT No. 4—HAMILTON**R. E. RICHARDSON, P.Eng., District Engineer****Construction**

The Burlington Bay Skyway bridge, 8,400 feet in length, and associated contracts for the construction of four miles of approaches, including two traffic interchanges, were completed and opened to traffic by Premier Leslie M. Frost, Q.C., on October 30, 1958 and the tolls became effective on November 10, 1958.

In addition to this, a number of contracts for major projects were awarded and a large amount of work accomplished on each, consisting of widening of Highway 20 to a 48-foot width of pavement, with 10-foot shoulders, from Stoney Creek, southerly, to Highway 53; two contracts for grading and culverts on Highway 401 from Highway 25 to Highway 6, a distance of approximately 12.5 miles, and which section included four contracts for concrete structures; grading and culverts on Highway 8, from the intersection of Highway 5, northerly, to Sheffield, a distance of nine miles, and the construction of a new high level bridge with approaches on Highway 5 at Oakville Creek. In addition to this, Highway 25 from the junction of Highway 5 at Palermo northerly to Milton, a distance of approximately 6.5 miles, was reconstructed and resurfaced with 24-foot width of hot mix pavement and 10-foot shoulders.

Maintenance

Winter sanding was carried out completely under eight contracts.

When the Burlington Bay Skyway was opened to traffic, the maintenance establishment included some special equipment and new procedure. Equipment assigned to the Skyway and approaches included two station wagons,



The toll plaza on the Burlington Bay Skyway provides for 11 lanes of traffic while two outside lanes are also available for maintenance and emergency vehicles. Ten miles of piping laid in the concrete pavement keep the plaza free from snow and ice during the winter months.



Queen Elizabeth Way at the junction with Highway 2, Hamilton District.

one three-ton patrol truck, two graders, one 800-gallon water tank on a four-wheel trailer, and a specially equipped five-ton truck as a disaster unit. All trucks are equipped with the two-way radio, controlled from a dispatch office located temporarily in a temporary building at the north end of the structure. The station wagons are used alternately for patrolling the Skyway and approaches regularly to check for any hazards such as spilled objects on the travelled surface, stalled vehicles, etc.

The disaster unit is a five-ton truck with four-wheel drive and a special body. It carries a crane for lifting and towing, fire-fighting equipment, a vertical lift platform used mainly for electrical repairs, first aid equipment, etc. This unit is basically a stand-by unit in case of accidents involving possible fire which could seriously damage the structure.

Snow removal on the structure involves plowing to the center, where a metal grid was constructed in the boulevard. Snow is plowed onto this grid and then falls clear. In order to accomplish this, it was necessary to equip the two graders with left-mounted wings. The three-ton truck is also equipped with a reversible blade for plowing either of the right or left.

The toll plaza area is constructed with steam pipes buried in the concrete. It is the intention that the concrete will be heated in this way in future years, thus eliminating the necessity for sanding and snow clearing in this immediate area. However, for this first winter, winter maintenance had to be carried out by conventional methods. The staff for the toll plaza is administered by the Financial Comptroller's Branch, with various maintenance duties carried out by the District. The toll plaza administration building is not constructed as yet and a temporary building has to be used here also. We have not encountered any serious traffic problems in connection with the Skyway, and it is anticipated that the movement of summer traffic will be greatly facilitated in this area.



Queen Elizabeth Way facing west to Burlington Bay Skyway at the junction with Highway 2,
Hamilton District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
20	South of Stoney Creek to Jct. of Hwy. 53.	3.5	1957	.....	3.5
25	Palermo (Hwy. 5) to Milton.....	7.0	1958	.....	7.0
Q.E.W.	Beach Rd. interchange.....	2.7	1957	.....	2.7
8	Peters Corners to Sheffield.....	8.6	1958	.....	3.2
401	Hwy. 25 (Milton) to Campbellville.....	4.59	1958	.....	3.0
401	Campbellville Rd. to Hwy. 6.....	6.83	1958	.....	1.0
	Q.E.W. Service Rd. (Freeman) to Hwy. 2.	1.06	1958	.....	1.06
3	South Forks drain.....	0.10	1958	.....	0.10
58	Beiderman drain				
TOTALS.....		34.38		.....	21.56

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
20	South of Stoney Creek to Jct. of Hwy. 53.....	3.5	1957	.....	3.5	126,556
25	Hwy. 5 (Palermo) to Milton....	7.0	1958	.....	7.0	248,793
Q.E.W.	Beach Rd. interchange.....	2.7	1957	.....	2.7	58,457
8	Peters Corners to Sheffield.....	8.6	1958	.....	3.2	70,540
Q.E.W.	North and south approaches to Burlington Skyway.....	2.5	1957	.....	2.5	177,727
401	Hwy. 25 (Milton) to Camp- bellville Rd.....	4.59	1958	.....	3.0	33,558
401	Campbellville Rd. to Hwy. 6....	6.83	1958	.....	2.0	33,558
	Q.E.W. Service Rd. (Freeman) to Hwy. 2.....	1.06	1958	.....	1.06	19,695
TOTALS.....		36.78		.....	24.96	768,884

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
25	Palermo to Milton.....	7.00	17,500
25	Guelph Line.....	4.50	3,000
403	Guelph Line to Freeman interchange.....	2.96	9,220
Q.E.W.	Beach Rd. interchange.....	2.70	1,239
20	South of Stoney to Hwy. 53.....	3.50	12,529
Q.E.W.	Hwy. 2 to Beach Rd. interchange.....	2.50	34,700
52	North and south of Hwy. 97.....	2.20	3,945
52	South of Hwy. 5.....	6.70	1,087
52	Stockpile, Jct. 2 and 52.....	.....	1,782
97	Freelton to Galt.....	11.79	3,706
97	Stockpile at Jct. 97 and 52.....	.....	2,048
TOTALS.....		43.85	90,756

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
Q.E.W.	Burlington to Ft. Erie.....	67.1	1,697
2	Oakville to Brantford.....	32.3	830
3	Ft. Erie to Simcoe.....	85.5	1,812
3A	Chamber's Crs. to Welland.....	9.3	200
3C	Ft. Erie to Ridgeway.....	6.8	136
5	Trafalgar to Brant Co. Line.....	32.3	230
6	Port Dover to Guelph.....	59.3	590
7	Guelph to Hwy. 10.....	30.4	140
8	Galt to Niagara Falls.....	57.8	1,486
8A	St. Davids to Queenston.....	2.8	63
20	Burlington to Niagara Falls.....	45.9	703
24	Simcoe to Port Dover.....	9.3	176
25	Q.E.W. to Hwy. 7.....	22.2	135
52	Hwy. 2 to Hwy. 97.....	13.9	130
53	Hwy. 20 to Hwy. 2.....	13.1	179
54	Cayuga to Cainsville.....	26.9	682
55	Hamilton to Hwy. 53.....	1.9	28
56	Elfrida to Hwy. 3.....	14.8	199
57	Bismark to Beckett's Bridge.....	8.8	89
58	Port Colborne to Hwy. 8.....	15.7	377
97	Hwy. 6 to Galt.....	13.7	70
99	Dundas to Hwy. 24.....	16.9	198
102	Dundas to Hamilton.....	4.0	47
TOTALS.....		590.7	10,197

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
20	South of Stoney Creek to Hwy. 53.....	3.5	1958	.....	1.2	10,000
403	Guelph Line to Freeman interchange.....	2.96	1958	.....	2.96	27,000
Q.E.W.	Beach Rd. interchange.....	2.7	1958	.....	2.7	4,800
Q.E.W.	North and south approaches to Skyway.....	2.5	1958	.....	2.5	30,000
25	Palermo (Hwy. 5) to Milton....	7.0	1958	.....	7.0	26,000
TOTALS.....		18.66	.....	.....	16.36	97,800



Queen Elizabeth Way overpass at Brant Street, Hamilton District.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
52	Hwy. 97 north to Wellington Co. Line.....	2.0	.....	2.0	3,795
52	Hwy. 97 south to Hwy. 8.....	.10	.....	.10	150
52	Hwy. 5 south to Hwy. 2.....	.70	.....	.70	1,087
97	Hwy. 6 west to Hwy. 8 (Galt).....	15.0	.....	2.50	3,706
2	Duff's Crs. Yard.....	.....	.....	.....	1,427
TOTALS.....		17.80	.....	3.50	10,165

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
7, 25, 6	Vicinity of Guelph and Hamilton.....	6.0	6,000
3C, 58, 3, 3A	Vicinity of Pt. Colborne.....	9.0	9,000
24, 54, 3, 6	Vicinity of Jarvis.....	7.5	7,500
TOTALS.....		22.5	22,500

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
56	Jct. Hwy. 3 to 2 mi. south of Binbrook.....	8.0	21,050	1,001.60
56	Binbrook to Jct. Hwy. 53.....	5.0	12,650	562.20
99	Jct. Hwy. 24 to Copetown.....	12.0	32,497	1,474.58
TOTALS.....		25.0	66,197	3,038.38



Underpass on the Queen Elizabeth Way at the Guelph Line, Hamilton District.

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
Q.E.W.	Skyway, Burlington Bay.....	1955	1958	T.T.
20	T.H. B. Lot 26 Con. 4, Saltfleet.....	1957	1958	R.F.
7	Rockwood, Lot 4 Con. 5, Eramosa.....	1958	1958	R.F.
Q.E.W.	Redhill, Greek Lot 30 by Con., Saltfleet.....	1957	1958	R.F.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
3	C.N.R.	Dunnville, 36.82 mi.....	2 lights, 2 bells
3	C.N.R.	Dunville Sub., 2.1 mi.....	2 lights, 1 bell
24	C.N.R.	Townsend.....	2 lights, 1 bell

Totals of Other Work Done on District No. 4

Item	Total Number	Total Tons	Total Miles
Off-road parks maintained.....	1	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	621
Roadside picnic places maintained.....	30	.....	.....
Routine maintenance, King's Highways.....	.....	.....	621
Salt for de-icing roads (raw).....	.....	1,805	621
Salt in sand, stockpiled.....	.....	8,441	.....
Sand for winter maintenance.....	.....	100,905	.....
Scale houses maintained.....	7	.....	.....
Seeding by department's forces..... (sq. yds.)	1,520,000	.....	.....
Shrubs received and planted this year.....	2,132	.....	.....
Signs erected or replaced.....	5,043	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	64
Traffic lights installed this year.....	3	.....	.....
Weed control.....	.....	.....	38
Zone painting on King's Highways..... (gals.)	12,974	.....	826

DISTRICT No. 5—OWEN SOUND**E. J. ORR, P.Eng., District Engineer****Construction**

During 1958 work was completed on four structures: Bells Creek bridge, three miles south of Mount Forest on Highway 6; Fairbanks Creek bridge, four miles north of Mount Forest on Highway 6; Rocky Saugeen bridge, 3.5 miles north of Durham on Highway 6; and the Styx River bridge, eight miles north of Durham on Highway 6.

Grading, culverts and granular base were completed in Durham to Dornoch on Highway 6; Shelburne, westerly 7.3 miles on Development Road 384; and Mount Forest to Orchard on Highway 6.

Hot mix pavement was completed on Mount Forest to Orchard on Highway 6.

Maintenance

Two new bulk salt storage sheds were erected by district forces at Durham and Waverley Patrol Yards.

The winter was exceptionally severe this year and because of the amount of snow, blowers were the only machine that enabled us to keep the roads open. We had the opportunity to try out a four-wheel drive four-ton plow and it proved very satisfactory in the heavy snow. The additional traction and power gained made it the equivalent of the older six-ton plows for performance.



Highway 89, east of junction with Highway 10 at Primrose, Owen Sound District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
6	Bell's Creek and C.P.R. overpass to 3.0 mi. south of Mount Forest.....	0.57	1957	0.23	0.34
6	Mount Forest to Orchard.....	7.27	1957	5.00	2.27
6	Beatty Saugeen River structure and approaches to 7 mi. north of Mount Forest.....	0.34	1957	0.17	0.17
6	Rocky Saugeen River structure and approaches to 3.5 mi. north of Durham.....	0.80	1957	0.30	0.50
6	Durham to Dornoch.....	8.00	1957	1.50	6.50
6	Fairbanks Creek structure to 4 mi. north of Mount Forest.....	0.24	1958	.....	0.24
6	Styx River structure to 8 mi. north of Durham.....	0.15	1957	.....	0.15
10, 24	Orangeville to Camilla.....	6.07	1958	.....	0.10
21	Saugeen River bridge, Southampton.....	1.0	1957	0.10	0.80
90	Nottawasaga River bridge, Angus.....	0.41	1958	.....	0.20
400	C.P.R. overhead at Craighurst.....	0.15	1958	.....	0.15
400	Crown Hill to Craighurst.....	7.90	1958	.....	7.90
TOTALS.....				7.30	19.32

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
6	Mount Forest to Orchard....	7.27	1957	1.70	5.57	60,638
6	Durham to Dornoch.....	8.00	1957	1.00	7.0	61,788
6	Beatty Saugeen River structure to 7 mi. north of Mount Forest.....	0.34	1957	.....	0.34	3,939
6	Rocky Saugeen River structure to 3.5 mi. north of Durham.....	0.80	1957	.....	0.80	9,558
6	Fairbanks Creek structure to 4 mi. north of Mount Forest.....	0.24	1958	.....	0.24	3,204
6	Styx River structure to 8 mi. north of Durham.....	0.15	1957	.....	0.15	6,500
21	Saugeen River bridge, Southampton.....	1.00	1957	.....	0.5	4,050
90	Nottawasaga River bridge, Angus.....	0.41	1958	.....	0.30	11,558
TOTALS.....				2.70	14.90	161,235

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
6	Mount Forest to Orchard.....	7.27	26,744
6	Durham to Dornoch.....	8.00	18,991
6	Beatty Saugeen structures to 7 mi. north of Mount Forest.....	0.34	4,980
6	Rocky Saugeen structure to 3.5 mi. north of Durham.....	0.80	1,141
6	Fairbanks Creek structure to 4 mi. north of Durham.....	0.24	530
6, 21	Springmount to Hepworth.....	13.30	41,628
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory.....	17.50	33,982
4, 9	Kinloss, Walkerton vicinity.....	34.00	10,000
27, 91, 92	Craighurst, Elmvale vicinity.....	46.00	19,987
TOTALS		127.45	157,983



Bridge over Rocky Saugeen River under construction on Highway 6, north of Denham, Owen Sound District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory.....	27	15,000
4, 9	Hanover to Kincardine.....	38	3,850
91	Duntroon to Stayner.....	5	4,000
93	Crown Hill to Craighurst.....	7	11,400
24, 10	Primrose to Singhampton.....	22	1,200
89	Rosemont to Alliston.....	8	6,000
TOTALS.....		107	41,450

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
6	Bell's Creek to 3 mi. south of Mount Forest.....	0.57	1958	.....	0.57	2,096
6	Mount Forest to Orchard.....	7.27	1958	.....	6.70	21,545
TOTALS		7.84		.....	7.27	23,641

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
6	13.4 mi. north to 18.6 mi. north of Warton.....	5.2	.....	5.2	11,400

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory.....	30.0	79,000	2,230
4	Durham to 12 mi. east (various sections).....	4.5	12,000	330
21	Southampton cut-off.....	3.0	9,000	223
91	Stayner to Duntroon (various sections).....	4.0	12,000	297
93	Crown Hill to Craighurst.....	7.0	21,000	520
TOTALS.....		48.5	133,000	3,600

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
6, 21	Springmount to Hepworth.....	13.3	33,181

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
6	Bell's Creek, 3 mi. south of Mount Forest.....	1957	1958	Concrete rigid frame
6	Fairbanks Creek, 4 mi. north of Mount Forest.....	1958	1958	Concrete rigid frame
6	Rocky Saugeen River, 3.5 mi. north of Durham.....	1957	1958	Concrete rigid frame
6	Styx River, 8 mi. north of Durham..	1958	1958	Concrete rigid frame

New Buildings

Hwy. No.	Location	Purpose of Building
4	1 mi. west of Durham.....	Salt shed
27	Midhurst at Jct. Hwys. 26 and 27.....	Patrol office and tool shed
27	2 mi. north of Waverley.....	Salt shed

Totals of Other Work Done on District No. 5

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	1	.....	.....
Calcium dust layer on gravel roads.....	.....	200	48
Off-road parks maintained.....	1	.....	.....
Roads snowplowed and kept open, King's Highways.....	14	.....	529.06
Roadside picnic places maintained.....	94	.....	.....
Routine maintenance, King's Highways.....	.....	.....	529.06
Salt for de-icing roads (raw).....	.....	11,633	529.06
Salt in sand, stockpiled.....	.....	2,685	.....
Sand for winter maintenance.....	.....	56,700	.....
Scale houses maintained.....	1	.....	.....
Seeding by Department's Forces.....(sq. yds.)	934,000	.....	.....
Signs erected or replaced.....	2,381	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	157
Weed control.....	.....	.....	131
Zone painting on King's Highways.....(gals.)	4,190	.....	419

DISTRICT No. 6—TORONTO**C. FRASER, P.Eng., District Engineer****Construction**

On November 3, 1958, Highway 401 was officially opened between Highways 27 and 10. This now completes a point-to-point mileage of 47.48 from Highway 10 easterly to Oshawa. Work was continued westerly to Highway 25, the western boundary of the District.

Several structures between Highway 27 and Highway 10 commenced last year were completed and twelve new structures were completed between Highway 10 and Highway 25, together with two additional structures under construction. Two contracts for paving between Highway 10 and Highway 25 were let.

Highway 5 was widened and repaved between Summerville and Cooksville and an overhead constructed at the C.P.R. crossing one mile east of Cooksville.

With the laying of 52,000 tons of bituminous mix, the widening of the Q.E.W. from Highway 27 to the Humber was completed.

Interchanges at Kerr Street and at Mississauga Road, both in progress last year, were completed.

Work on Toronto Township service roads in progress was completed and considerable work done on further service roads in Trafalgar Township.

Maintenance

Last year's report included a statement on the use of "Cat's Eyes" for marking on bad curves. This proved satisfactory on the one location. However,



Interchange under construction at junction of Highways 401 and 27, Toronto District.



Grading and fill Innisville Township service road near Highway 400, north of Cookstown Road, Toronto District.

they appear to present a problem for snow removal operations if used to a great extent. At one location the operator is able to watch them. They are quite effective, particularly during fog conditions.

During the past season overhead signs were erected at some major intersections, particularly on the approach to the Fred Gardiner Expressway. These have proved to be very effective, with the result that they will be placed at all major intersections during the coming year.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
10	3 mi. south of Caledon to Orangeville.....	10.00	1957	3.70	6.30
11	Newmarket to Bradford.....	5.60	1957	.05	5.55
12	Whitby to Brooklyn.....	6.46	1958	.....	6.46
27	Jellico Ave. to Evam. Ave.....	1.10	1958	.....	1.10
27	C.P.R. Overhead Hwys. 27 and 2.....	0.31	1958	.....	0.25
400	King Twp. service road east of Hwy. 400....	8.42	1957	5.72	2.70
400	Cookstown to Barrie service road.....	6.07	1958	.....	6.07
400	Gwillimbury service road.....	0.95	1958	.....	0.95
400	Teston side road, Vaughan Twp.....	0.40	1958	.....	0.20
401	Hwy. 10 to Toronto/Trafalgar Line.....	5.21	1957	1.66	3.55
401	Toronto/Trafalgar Line to Hwy. 25.....	7.76	1957	3.75	4.01
401	Jane/Dufferin truck lane.....	1.80	1958	.....	1.80
Q.E.W.	Mississauga Road.....	2.36	1957	1.53	0.83
Q.E.W.	Kerr Street.....	2.09	1957	1.88	0.21
Q.E.W.	Trafalgar Twp. service road, Lots 20-21....	0.43	1958	.....	0.30
Q.E.W.	Trafalgar Line to Hwy. 25 service road.....	7.00	1958	.....	2.80
Q.E.W.	Appleby Line Crossover.....	0.36	1958	.....	0.18
Q.E.W.	Trafalgar service road to North Kerr St.....	3.43	1958	.....	3.43
Q.E.W.	Trafalgar service road to South Kerr St.....	3.46	1958	.....	3.46
Q.E.W.	Trafalgar service road to North and South Bronte.....	2.18	1958	.....	2.18
TOTALS.....		75.49		18.29	52.33

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1958-59	Tons Placed 1958-59
10	3 mi. south of Caledon to Orangeville.....	10.00	1957	8.70	279,480
11	Newmarket to Bradford.....	5.60	1957	5.55	334,700
12	Whitby to Brooklin.....	6.46	1958	6.46	162,774
27	Jellico Ave. to Evans Ave.....	1.10	1958	1.10	77,500
27	C.P.R. Overhead Hwys. 27 and 2.....	0.31	1958	0.20	29,765
400	King Twp. service road east of Hwy. 400....	8.42	1957	4.22	93,011
400	Cookstown to Barrie service road.....	6.07	1958	6.07	111,110
400	Gwillimbury service road.....	0.95	1958	0.95	20,032
400	Teston side road, Vaughan Twp.....	0.40	1958	0.20	11,220
401	Hwy. 10 to Toronto/Trafalgar Line.....	5.21	1957	4.21	54,370
401	Toronto/Trafalgar to Hwy. 25.....	7.76	1957	7.76	60,782
401	Hwy. 27 to Etobicoke Creek.....	2.90	1958	2.90	146,691
401	Jane to Dufferin truck lane.....	1.80	1958	1.80	23,975
Q.E.W.	Mississauga.....	2.36	1957	1.18	24,267
Q.E.W.	Kerr St.....	2.09	1957	0.21	496
Q.E.W.	Trafalgar Twp. service road, Lots 20-21....	0.43	1958	0.21	11,220
Q.E.W.	Trafalgar Line to Hwy. 25 service road.....	7.00	1958	0.45	11,500
Q.E.W.	Appleby Line.....	0.36	1958	0.14	10,004
Q.E.W.	Trafalgar service road to North Kerr St.....	3.43	1958	3.43	76,200
Q.E.W.	Trafalgar service road to South Kerr St.....	3.46	1958	3.46	72,785
Q.E.W.	Trafalgar service road to North and South Bronte.....	2.18	1958	2.18	46,147
5	C.P.R. Overhead, Cookville.....				61,410
49	Humber River, Hwy. 27 and Hwy. 49.....				12,525
400	Laskey Bridge, King Twp.....				5,064
401	Structure 5, Toronto Twp.....				4,747
401	Structure 7, Toronto Twp.....				76
401	Structure 8, Toronto Twp.....				380
401	Structure 10, Toronto Twp.....				29,068
401	Structure 15, Toronto Twp.....				534
401	Structure 14, Toronto Twp.....				254
401	Structure 11, Toronto Twp.....				212
401	Structure 12, Toronto Twp.....				255
401	Structure 0, Hwy. 401, Hwy. 27.....				15,005
401	Structure 6, Trafalgar Twp.....				528
401	Structure 4, Trafalgar Twp.....				543
401	Structure 9, Trafalgar Twp.....				421
401	Structure 0, Trafalgar/Esquising.....				254
401	Meadowvale, Toronto Twp.....				868
401	Oakville Creek, Trafalgar Twp.....				5,240
Q.E.W.	Lakeshore Expressway.....				15,280
Q.E.W.	Ogden Ave. Ped. Overpass.....				638
TOTALS.....		78.29		61.38	1,811,331

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Tons Placed 1958-59
10	3 mi. south of Caledon to Orangeville.....	10.00	41,036
11	Newmarket to Bradford.....	5.60	13,000
12	Whitby to Brooklin.....	6.46	6,739
27	Jellico Ave. to Evans Ave.....	1.10	1,400
27	C.N.R. Overhead at Hwy. 2.....	0.15	550
27	Hwy. 27 and Rexdale.....		665
400	Cookstown to Barrie service road.....	6.07	7,600
400	Gwillimbury service road.....	0.95	1,421
Q.E.W.	Mississauga Road.....	2.36	781
Q.E.W.	Kerr St.....	2.09	938
Q.E.W.	Mississauga Road Diversion.....	0.50	741
400	D.H.O. Yard Sheppard Ave. Stockpile.....		10,009
400	Laws Pit Stockpile.....		9,987
401	Rouge Yard Stockpile.....		10,359
Q.E.W.	Stavebank Yard Stockpile.....		5,000
TOTALS.....		35.28	110,226



Widening of Highway 5 at Cooksville, Toronto District.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Year Begun	Tons Placed 1958-59
Q.E.W.	Mississauga Road Diversion.....	1958	7,315

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Miles Compl. 1958-59	Tons Placed 1958-59
5	Summerville to Cooksville.....	3.00	1958	3.00	29,611
10	3 mi. south of Caledon to Orangeville.....	10.00	1958	10.00	38,608
11	Newmarket to Bradford.....	5.60	1958	5.60	39,100
27	Rexdale service road.....	0.50	1958	0.50	1,322
27, 2	Interchange.....	0.31	1958	0.31	1,305
48	Armadaile Diversion.....	0.89	1958	0.89	3,027
401	Etobicoke to Hwy. 10.....	3.90	1958	3.90	16,443
401	Hwy. 27 to Etobicoke.....	2.90	1958	2.90	9,531
Q.E.W.	Mississauga Road.....	2.36	1958	2.36	10,464
Q.E.W.	Kerr Street.....	2.09	1958	2.09	7,230
Q.E.W.	Mississauga Diversion.....	0.50	1958	0.50	1,652
Q.E.W.	Humber to Hwy. 27.....	3.75	1958	3.75	52,340
TOTALS.....		35.80		35.80	210,633

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed
Various	Various isolated patching only.....	4,728

Bridges Built

Hwy. No.	Location	Year Begun	Year Compl.	Type
5	C.P.R. Overhead, Cooksville.....	1958		
10	Credit River, 2 mi. south of Orangeville.....	1958	1958	Rigid frame
12	Lynde Creek, north of Whitby.....	1957	1958	Concrete rigid frame
49	Humber River west of Hwy. 27.....	1958	1958	Concrete beam
400	Laskey Bridge, King Twp. west of Hwy. 400.....	1958	1958	Steel beam
400	Anne Street, Barrie.....	1957	1958	Concrete rigid frame
401	Strs. 101C and 101D Hwy. 27 and Hwy. 401.....	1958	1958	Concrete rigid frame
401	Bridge 11, Con. 1 and 2, Toronto Twp.	1957	1958	Concrete rigid frame
401	Bridge 12, Con. 2 and 3, Toronto Twp.	1958	1958	Continuous concrete beam
401	Bridge 12A, Meadowvale, Toronto Twp.	1958	1958	Concrete girder
401	Bridge 13, Credit River, Toronto Twp.	1958	1958	Concrete rigid frame
401	Bridge 14, Con. 3 and 4, Toronto Twp.	1957	1958	Concrete beam
401	Bridge 15, Streetsville, Toronto Twp.	1958	1958	Concrete girder
401	Bridge 17, Con. 3 and 4, Toronto Twp.	1957	1958	Concrete rigid frame
401	Bridges 10 and 10A, Con. 5 and 6, Trafalgar.....	1958	1958	Concrete rigid frame
401	Bridge 9, Con. 6 and 7, Trafalgar.....	1958	1958	Concrete girder
401	Bridge 6, Con. 7 and 8, Trafalgar.....	1958	1958	Continuous concrete beam
401	Oakville Creek 7, Trafalgar.....	1958	1958	Concrete rigid frame
401	Bridge 1, Trafalgar/Esquising Line....	1958	1958	Continuous concrete beam
Q.E.W.	East Bound Ramp "A", Lakeshore Expressway.....	1957	1958	Concrete steel girder

Totals of Other Work Done in District No. 6

Item	Number	Total Tons	Total Miles
Bridges painted.....	9		
Calcium dust layer on gravel roads.....			
Roads snowplowed and kept open, King's Highways.....			716.51
Roadside picnic places maintained.....			
Routine maintenance, King's Highways.....			716.51
Salt for de-icing roads (raw).....		16,110	
Salt in sand, stockpiled.....		5,285	
Sand for winter maintenance.....		126,902	
Scale houses maintained.....	6		
Seeding by Department Forces.....(sq. yds.)	2,952,400		610 Acres
Shrubs received and planted this year.....	5,613		
Signs erected or replaced.....	8,262		
Snow fence erected, dismantled and stored.....			76.8
Traffic lights installed this year.....	5		
Weed control.....			372.0
Zone painting on King's Highways.....(gals.)	18,690		1,598
Right of way fencing.....			47.84

DISTRICT No. 7—PORT HOPE**H. D. DUFF, P.Eng., District Engineer****Construction**

A major highlight of the construction during the fiscal year 1958-59 was the large construction program on Highway 401. Grading was in progress in various stages on 45.5 miles of this highway in eight major grading contracts and two separate interchange contracts, between Newcastle and Brighton.

The hot mix paving was completed for 10.2 miles between Brighton and Trenton on Highway 401 and the highway was opened to traffic. Also between Newcastle and Brighton on Highway 401 there were 28 structures under construction of which four were completed during the year.

Grading and structures were completed on the T.C.H. Lindsay By-pass. Hot mix paving contracts covered the five grading jobs in this area, and they were completed with the by-pass being opened to traffic. Construction was under way on Highway 28 south of Peterborough and on three structures on the T.C.H. Peterborough By-pass.

Maintenance

On October 10, 1958, Highways 7, 35 and 36 Lindsay By-pass were opened to traffic and on November 1, 1958 the section of Highway 401 from Brighton to Trenton was opened bringing the district mileage to a total of 721 miles.

The five-bay patrol garage constructed by the Department of Public Works at the junction of Highways 115 and 28 was completed in October 1958. The extension to the district office for the use of clerical and construction staff was completed in September 1958. Construction of a five-bay patrol garage was



Highway 401, east of Highway 30, looking west. At this point median strip is 100 feet wide, Port Hope District.



Highway 401 and Dyeworks Creek, showing 40-foot arch culvert, Port Hope District.

started on Highway 14 north of Bloomfield in November 1958 and completion is expected by mid-summer, 1959. At Lindsay the district started construction of an eight-bay patrol garage by day labour forces. Work was under way in late March and it should be ready for occupancy by early November.

The District experienced an unusually severe winter. With the large number of construction contracts in the district, tree planting and grass seeding program was extensive with very good results.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1958-59
401	Newtonville Interchange.....	1.50	1957	1.5
401	Newtonville to 5.5 mi. east.....	5.50	1957	4.0
401	Jct. Hwys. 2 and 115 to 6.61 mi. east.....	6.61	1957	4.0
46	Kirkfield north to Bexley county road.....	3.50	1957	3.5
7	T.C.H. Jct. Hwys. 7 and 35 to 1.15 mi. east.....	1.15	1957	1.15
28, 133	Fraserville to Peterboro.....	11.00	1957	5.0
401	Morrish Road to Hwy. 28.....	4.53	1958	2.0
115, 135	Channelization to Hwys. 115 and 35.....		1958	Complete
401	Hwy. 45 easterly.....	5.39	1958	2.0
401	1.51 mi. east of Haldimand Twp. line to Vernonville Road.....	5.17	1958	
33	Wellington to Bloomfield.....	5.08	1958	
401	Port Hope Hwy. 28 to Cobourg, Hwy. 45.....	5.90	1958	1.0
TOTALS.....		55.33		24.15

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1958-59	Tons Placed 1958-59
7 T.C.	2 mi. southeast of Lindsay for 1.15 mi.	1.15	1957	1.15	71,072
7	Scugog River bridge.....		1957		5,417
401	Jct. Hwys. 2 and 115 for 6.61 mi. east.....	6.61	1957	4.0	29,245
28, 133	Fraserville to Peterboro.....	11.0	1957	5.0	135,245
401	Newtonville for 5.5 mi. east.....	5.5	1957	4.0	25,750
401	Newtonville Interchange.....	1.5	1957	1.5	23,407
401	C.P.R. Overhead at Newcastle.....		1957	Complete	19,573
401	Wilmot Creek.....		1957	Complete	6,990
46	Kirkfield north to Bexley county road.....	3.5	1957	3.5	21,746
401	Graham Creek.....		1957	Complete	2,831
401	Wooler Road.....		1957	Complete	11,859
401	Morrish Road to Hwy. 28.....	4.53	1958	2.0	12,536
401	Clarke and Hope Twp. Line.....		1958		1,284
401	Hwy. 30 easterly.....	4.53	1958	4.53	104,031
401	Intersection of Hwy. 401 and the Morrish Road.....		1958		1,950
401	Trenton westerly.....	4.6	1958	4.6	126,633
36	Lindsay C.N.R. Overhead.....	0.65	1958	0.65	24,347
401	Gages Creek, approx. 2.0 mi. east of Port Hope.....		1958		5,422
401	Hwy. 401 and Hwy. 115 Interchange.....	1.2	1958		19,650
7 T.C.	Oakwood easterly for 5.5 mi. and				
35	Hwy. 7 northerly for 2.93 mi.....	8.48	1958	8.48	11,324
401	Dye Works Creek.....		1958		3,789
7 T.C.	From road allowance between Lots 20 and 21 easterly 4.55 mi., and				
36	From Hwy. 7 (T.C.H.) northerly 1.41 mi....	5.96	1958	5.96	9,981
115, 35	Intersection Hwys. 115 and 35; and Intersection of North Entrance to New- castle.....		1958		16,024
401	Hwy. 45 to 1.5 mi. east of Hamilton- Haldimand Twp. Line.....	5.39	1958		27,329
401	Hamilton Bridge 10, Cobourg Creek.....		1958		6,300
45	Ouse River in Norwood Village.....		1958		10,719
401	Hwy. 28 to Hwy. 45, Hamilton Twp. Br. 9	5.88	1958		4,836
TOTALS.....		70.48		45.37	739,290

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
7A	Nestleton Station to Jct. 115.....	24.20	3,000
12	Brooklin to Myrtle (shoulders).....	4.0	100
28	Jct. Hwys. 133 and 28 to Peterboro.....	6.0	200
33	Glenoria area (washouts).....	1.0	100
36	Nogies Creek to Burleigh Falls.....	24.5	3,000
35	Pontypool northerly (washouts).....	6.0	2,000
41	5 mi. north of Oicton.....	0.3	200
45	Roseneath to Norwood.....	16.0	3,500
46	Kirkfield to Coboconk.....	14.23	2,000
133	Jct. Hwy. 28 to Hwy. 7.....	5.40	1,500

Secondary Roads

500	Jct. Hwy. 121 southerly 3.5 mi.....	3.5	500
503	Kinmount to Kirkfield.....	47.5	4,000
505	Hwy. 46 to Uphill.....	11.0	200
507	Hwy. 36 to Catacoma Road.....	18.5	3,000
TOTALS.....		182.10	23,300



Overhead on Highway 401 crossing C.P.R. tracks at Newcastle, Port Hope District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
7 T.C.	2 mi. southeast of Lindsay	1.15	16,878
401	Jct. Hwys. 2 and 115 to 6.61 mi. east.....	6.61	18,000
28, 133	Fraserville to Peterborough.....	11.00	51,192
			3,751
			788
401	Newtonville Interchange to 5.78 mi. east.....	5.78	4,350
401	Newtonville Interchange.....		5,511
46	Kirkfield north to Bexley county road.....	2.55	21,746
			3,382
			1,300
401	Morrish Road to Hwy. 28	4.53	12,536
			908
401	Road allowance between Clarke and Hope Twps.....		778
			162
401	Hwy. 30 easterly.....	4.53	104,032
			24,125
401	Interchange Hwy. 401 and Morrish Road.....		1,950
401	Trenton westerly.....	4.60	126,633
			23,168
36	Lindsay C.N.R. Overhead.....	0.65	2,155
115, 35	Intersection of Hwys. 115 and 35, intersection north entrance to Newcastle.....	0.77	16,024
401	Hwy. 45 to 1.5 mi. east of Hamilton/Haldimand Twp. Line.....	5.39	8,000
7, 35	Hwy. 7 easterly 5.5 mi., Hwy. 35 northerly 2.93 mi., Hwys. 7 and 35 west 0.72 mi., Hwy. 7 westerly 0.91 mi.....	6.27	1,130
			12,243
			11,711
36,	Road allowance between lots 20 and 21 easterly, 4.55 mi., Hwy. 36		
7 T.C.	northerly 1.41 mi., Hwy. 7 (old) easterly 1.65 mi.....	7.61	15,531
			17,658
401	Hwy. 28 to Hwy. 45.....	5.88	1,878
30	Intersection Hwys. 2 and 30 to 3.1 mi. northerly.....	3.10	3,532
30	Hwy. 401 to Warkworth turn.....	10.80	4,149
			1,250
			17,266
TOTALS		81.22	533,717



Junction of Hope-Clarke Township road and Highway 401 east of Newtonville. Structure has prestressed beams and stone rip-rap on Highway 401 cut slopes, Port Hope District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Years Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
35	Jct. Hwys. 35 and 7A northerly	5.50	1957	2.75	2.75	4,444
28	Fraserville to Peterboro.....	11.10	1957	.....	5.00	10,864
401	Hwy. 30 easterly.....	4.53	1958	.....	4.53	38,802
401	Trenton westerly.....	4.60	1958	.....	4.60	47,556
7 T.C.	Hwy. 7 T.C. easterly 5.5 mi., Hwy. 35, Hwy. 7 northerly 2.93 mi.....	8.48	1958	.....	8.48	29,164
7 T.C.	From road allowance between Lots 20 and 21 easterly 4.55 mi. and					
36	From Hwy. 7 T.C. northerly 1.41 mi.....	5.96	1958	.....	5.96	26,611
115, 35	Intersection Hwys. 35 and 115 and intersection to north entrance to Newcastle.....	0.77	1958	.....	0.77	4,266
45	Roseneath northerly.....	7.10	1958	.....	7.10	16,884
7	From 2 mi. west of Lindsay to Oakwood.....	3.60	1958	.....	3.60	21,450
	TOTALS.....	51.64		2.75	42.79	200,041

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
500	2 mi. south of Jct. Hwy. 121 to 3.9 mi. south.....	1.9	.....	1.9	3,150
503	Kinmount westerly 2.0 mi.....	2.0	.....	2.0	3,000
503	Kirkfield northerly 2.0 mi.....	2.0	.....	2.0	3,000
	TOTALS.....	5.9		5.9	9,150



Bridge over the Scugog River on Highway 7 near Lindsay, Port Hope District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
7A	Caesarea Turn to Hwy. 115.....	20.0	52,700	1,660
35	North and south of Pontypool.....	0.4	1,062	35
35	1 mi. north of 7A to 3.8 mi. northerly.....	3.8	9,900	317
36	Nogie's Corner to Burleigh Falls.....	19.3	50,900	1,600
45	Norwood to 5 mi. southerly.....	5.0	13,200	417
45	Peterborough city limits to 4.6 mi. south.....	4.6	12,150	384
45	At Roseneath.....	0.7	1,851	58
46	At Coboconk.....	1.5	3,950	126
133	Hwy. 28 to Hwy. 7.....	5.40	14,220	454
500	Jct. Hwy. 121 southerly 3 mi.....	3.0	7,920	252
503	Kinmount to Kirkfield (except 6.3 mi. west of Seabright).....	39.20	103,000	3,254
505	Victoria Road 2.50 mi. northerly.....	2.50	6,500	207
507	Hwy. 36 11.00 mi. northerly.....	11.00	29,000	916
	TOTALS.....	116.40	306,353	9,680

Bituminous Resurfacing of Old Pavement

Hwy. No.		Miles Compl. 1958-59	Tons Placed 1958-59
701d	From station 29.00 west 0.52 mi. and from 4.0 mi. east of Oak- wood 1.65 mi.....	2.17	4,827
7	From intersection Hwys. 35 and 7 west 0.72 mi., from Lindsay westerly 0.91 mi.....	1.63	2,031
35	Lindsay to Fenelon Falls.....	13.6	11,600
30	From Hwy. 401 to Warkworth turn on Hwy. 30.....	10.8	26,983
30	From Brighton to 3.1 mi. northerly to intersection of Hwys. 2 and 30.....	3.1	7,357
	TOTALS.....	31.30	52,798

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
7	T.C. Scugog River Bridge.....	1957	Open	Prestressed beams simply supported
401	Newtonville Interchange.....	1958	No	Rigid frame
401	Newcastle C.P.R.....	1958	No	Rigid frame
401	Wilmot Creek.....	1958	No	Rigid frame
401	Graham Creek.....	1958	No	Barrell arch
401	Wooler Road.....	1957	Open	Rigid frame
401	Clarke and Hope Twp. Line..	1958	No	Open abutment prestressed beams continuous over piers
46	Kirkfield Bridge over Trent Canal.....	1957	Open	Rigid frame

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Flash Lights Bell
2	C.P.R.	Mileage 36.78, Oshawa Subdivision.....	X

New Buildings

Location	Purpose of Building	Year Begun	Completed
Jct. Hwys. 28 and 115.....	Salt Shed	Feb. 1959	March 1959
Jct. Hwys. 28 and 115.....	Patrol Garage	1957	Oct. 1958
Port Hope.....	Addition to District Office	1957	Sept. 1958

Totals of Other Work Done on District No. 7

Item	Total Number	Total Tons	Total Miles
Bridges painted	8		
Calcium dust layer on gravel roads.....		50	14.5
Off-road parks maintained.....	5		
Roads snowplowed and kept open, King's Highways.....	18		630.00
Roads snowplowed and kept open, Secondary Highways.....	4		91.00
Roadside picnic places maintained.....	107		
Routine maintenance, King's Highways.....			630.00
Routine maintenance, Secondary Highways.....			91.00
Salt for de-icing roads (raw).....		7,618.91	721.00
Salt in sand, stockpiled.....		4,147.61	
Sand for winter maintenance.....		107,222	
Scale houses maintained.....	1		
Seeding by Department's Forces.....(sq. yds.)	1,970,000		
Shrubs received and planted this year.....	4,720		
Signs erected or replaced.....	8,465		
Snow fence erected, dismantled, stored.....			88.8
Weed control.....			404.2
Zone painting on King's Highways.....(gals.)	10,310		750.8
Zone painting on Secondary Highways.....(gals.)	183		14.3

DISTRICT No. 8—KINGSTON**L. E. WALKER, P.Eng., District Engineer****Construction**

During the past year, Highway 401 was opened to traffic from Drummy's Side Road (west of Marysville) to Trenton, to connect with the Trenton-Brighton section to the west. At Kingston, another 5-mile section of Highway 401 was opened from Highway 15 easterly to the Joyceville side road which connects with Highway 2 pending completion of paving east of Gananoque. Paving after grading was completed on Highway 7, Trans-Canada Highway, from Perth westerly six miles, and from the junction of Highway 38 westerly seven miles. Paving and shouldering on Highway 29 from Brockville north 15 miles, was completed. Paving was completed after grading and building a structure on the county road from Madoc south under Development Road. Grading and paving on Highway 15 for 3.3 miles at Joyceville was completed. The structure on Highway 29 over Highway 401 was opened to traffic, and was built in conjunction with 7.8 miles of grading on Highway 401 which will have paving work started in 1959.

Maintenance

The completion of 29.86 miles of controlled-access Highway 401 and the opening of this mileage to traffic resulted in one new patrol being set up on District 8 under the maintenance section this year. This highway was divided into two sections: 23.27 miles from Trenton easterly to Marysville, and 5.59 miles from Highway 15 easterly.

The new section of Highway 401, from Trenton easterly, had had several areas of trees left within the right of way by the construction section to provide reasonably mature trees along this route of Highway 401 and a great deal of time was spent by District forces following the completion of the contract in cleaning up the trees areas to provide scenic groves. To service this additional highway, the District was supplied with two five-ton snowplows, three power rammers, two three-ton trucks as well as four rotary type mowers and two bar type mowers.

This District began an experiment into the control of vegetation in guide rail on Highway 37 which will require at least one more season before the District can determine which of the three chemicals used provides the most effective control of weed and grass growth between guide rail without excessive erosion of shoulder slope.

Construction was started on one four-bay patrol building and one six-bay patrol building at Arden and Marysville respectively for the use of field maintenance staff, summer and winter. Six new standard salt sheds were constructed, two at Marysville, one at Trenton, two at Arden and one at Seeley's Bay for use in storing winter maintenance chemical and two office additions were constructed by the Department of Public Works by day labour at the Middle Road Yard (Barriefield) and the yard, four miles south of Smiths Falls. These extensions were necessary due to the lack of tool storage and sufficient area for the men employed on winter maintenance on the 24-hour basis during the winter months.



Bridge under construction on Highway 401 over the C.N.R. west of Highway 29, Kingston District.

Completion of the new district garage building and the heated storage building at the new Counter Street Yard in the City of Kingston allowed the District to remove its operations from the old Montreal Street headquarters downtown in the city to the expansive new buildings and area in the northerly end of Kingston. The availability of these buildings has considerably increased the effectiveness of the mechanical and stockkeeping staff, since the design allows adequate use of all staff available. In addition to this move, the 47-acre yard was fine-graded and a chain link fence was erected around the equipment, stock and actual garage area to provide maximum security for the operations of the District.

The District received approval to remove the 40- by 100-foot Quonset building from the Montreal Street Yard to the patrol yard at Westbrooke and, following re-erection on foundation and floor at this point, the building was properly insulated and water, heat and plumbing installed by the Department of Public Works. This has given the District equivalent of a six-bay building at this point.

Gravel stockpiles for mixing cold mix patch and shouldering operation were supplied by contract to patrol yards at Tweed, Erinsville, Smiths Falls, Piccadilly and Trenton during the 1958-59 winter. Grading procedures were carried out by Maintenance forces at Trenton, Marysville and Arden to provide areas for maintenance yards. Seven linear miles of fence were erected by day labour on Highway 95 Wolfe Island to include widening to 100 feet within the fenced right of way.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
7 T.C.	Perth to Bathurst.....	6.90	1957	5.10	1.80
15	Joyceville to Brewers Mills.....	3.50	1957	0.60	2.90
41	Roblindale — C.P.R. Crossing.....	0.19	1958	.....	0.19
401	Hwy. 33 easterly to Rd. allowance between Lots 18 and 19.....	5.41	1957	5.11	0.30
401	Brockville west to Hwy. 2.....	6.50	1957	1.30	5.20
401	West limits of Hwy. 29 interchange to North Augusta Road.....	1.27	1957	0.42	0.85
401	Elizabethtown Twp. bridge 2.....	0.69	1958	.....	0.45
TOTALS.....		24.46		12.53	11.69



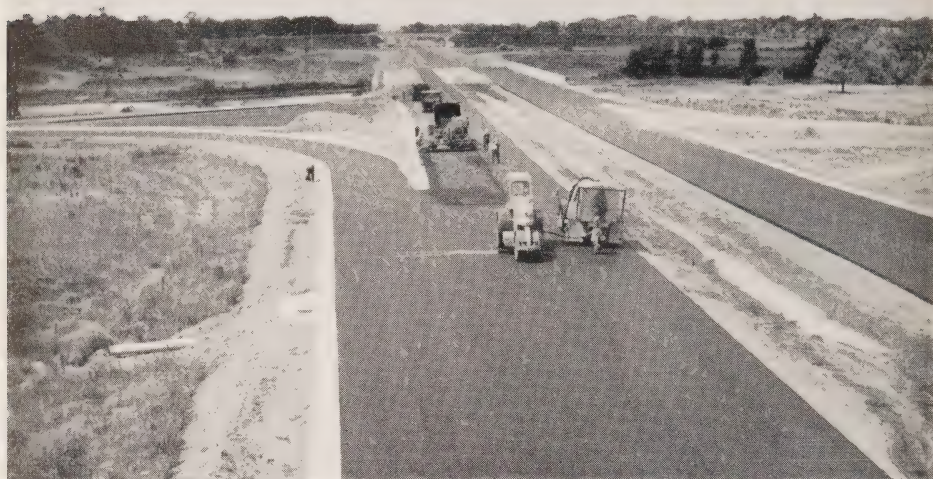
Salmon River bridge on Highway 401 north of Shannonville, pre-stressed concrete construction, Kingston District.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
7 T.C.	Hwy. 38 westerly.....	7.10	1958	.....	7.10	23,619
7 T.C.	Perth to Bathurst.....	6.90	1958	.....	6.90	81,532
15	Joyceville to Brewers Mills.....	3.50	1957	0.50	3.00	35,724
29	Brockville to Frankville.....	14.97	1958	.....	14.97	41,593
41	Roblindale to C.P.R. crossing.....	0.19	1958	.....	0.19	658
401	Hwy. 33 easterly to roads between Lots 18 and 19.....	5.41	1957	5.11	0.30	301,840
401	Lot 18 to Moira River.....	5.75	1957	5.00	0.75	202,918
401	Moira River easterly.....	6.63	1957	4.85	1.78	308,627
401	6.63 mi. east of Moira River and to Hwy. 2.....	6.07	1957	5.00	1.07	153,274
401	Cataraqui River to Joyceville and side road to Hwy. 2.....	6.52	1957	4.80	1.72	40,076
401	Joyceville side road east to Leeds County Line.....	4.82	1958	.....	4.82	103,747
401	Leeds County Line to Jct. Hwys. 401 and 2.....	5.47	1958	.....	2.19	50,583
401	Elizabethtown Twp. bridge 2.....	0.69	1958	.....	.....	1,000
401	Elizabethtown Twp. bridge 7.....	0.20	1958	.....	0.20	2,510
401	West limits of Hwy. 29 interchange to North Augusta Rd.....	1.27	1957	0.42	0.85	7,604
401	Hwy. 32 over structure.....	0.20	1958	.....	0.20	15,921
TOTALS.....		75.69		25.68	46.04	1,371,226

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Tons Placed 1958-59
2	Napanee to Odessa Stockpile.....	10,000
14	Stirling Patrol Yard Stockpile.....	5,000
15	D.H.O. Patrol Yard, Smiths Falls Stockpile.....	5,000
15	D.H.O. Patrol Yard, Pittsburgh Twp. Stockpile.....	10,000
37	D.H.O. Patrol Yard, Tweed Stockpile.....	5,000
38	D.H.O. Patrol Yard, north of Verona Stockpile.....	5,000
41	Erinsville Patrol Yard Stockpile.....	5,000
401	Vicinity of Trenton Stockpile.....	10,000
TOTAL.....		55,000



Facing west on Highway 401 from Highway 37. Picture shows Moira River Bridge and Highway 14, Kingston District.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
401	Gananoque east to Rockport....	10.93	1958	.....	3.50	61,902

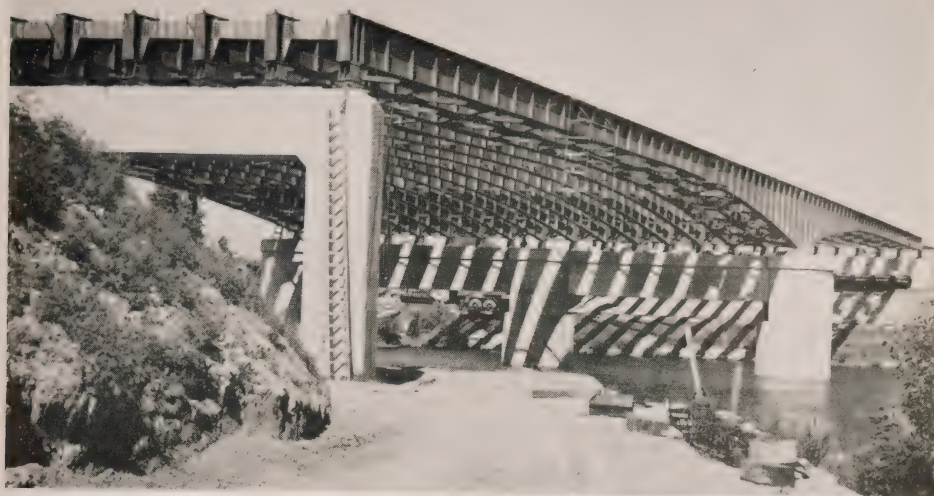
Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
2	Napanee to Kingston.....	20.7	2,117
2	Kingston to Gananoque.....	16.2	275
2	Gananoque to Crystal Beach.....	24.7	521
2	Crystal Beach to Johnstown.....	13.6	1,000
7 T.C.	Madoc to Perth.....	80.0	1,100
14	Belleville to Marmora.....	26.4	1,100
15	Kingston to Perth.....	69.0	275
29	Brockville to Smiths Falls.....	29.2	530
32	Gananoque to Hwy. 15.....	11.4	15
33	Adolphustown Ferry to Kingston.....	30.3	200
33	Trenton to Hwy. 14.....	14.0	400
37	Belleville to Hwy. 7.....	27.9	150
38	Hwy. 2 to Hwy. 7.....	43.3	510
41	Napanee to Hwy. 7.....	30.7	20
42	Hwy. 29 to Westport.....	32.6	80
95	Limits of Wolfe Island.....	7.4	40
96	Limits of Wolfe Island.....	20.1	60

Secondary Roads

502	Napanee to Hwy. 2, Marysville.....	7.85	740
509	Hwy. 7 to Clarendon.....	6.6	80

TOTALS.....	511.95	9,213
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Bridge construction on Highway 401 over the Gananoque River and the Thousand Islands Railway, Kingston District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
7 T.C.	Perth west to Bathurst.....	6.78	1958	.....	6.78	26,451
7 T.C.	Hwy. 38 westerly.....	7.10	1958	.....	7.10	25,719
15	Joyceville to Brewers Mills.....	3.50	1958	.....	3.50	8,663
29	Brockville to Frankville.....	11.71	1958	.....	11.71	37,508
41	Roblindale to C.P.R. crossing..	0.19	1958	.....	0.19	623
401	Hwy. 33 easterly.....	5.41	1957	4.7	0.71	21,627
401	Lot 18 to Moira River.....	5.72	1957	.....	5.72	33,485
401	Moira River easterly.....	6.63	1958	.....	6.63	59,646
401	East of Moira River easterly....	6.07	1958	.....	6.07	55,744
401	Cataraqui River to Joyceville Side Road to Hwy. 2.....	6.52	1957	1.70	4.82	36,213
401	Joyceville Side Road — Leeds County Line.....	4.82	1958	.....	(Base only)	31,040
401	Hwy. 32 over structure and approaches.....	0.20	1958	.....	0.20	656
401	Elizabethtown Twp. bridge 7....	0.20	1958	.....	0.20	393
401	Leeds County Line to Jct. Hwys. 401 and 2.....	5.47	1958	.....	.....	287
401	Gananoque east to Rockport....	10.93	1958	.....	3.50	11,338
401	West limits of Hwy. 29 to interchange to N. Augusta Rd....	1.27	1958	.....	0.25	1,704
2, 401	Various.....	.....	1958	.....	.....	6,697
14, 37	Various.....	.....	1958	.....	.....	4,448
33	Kingston to Millhaven.....	.....	1958	.....	.....	950

Secondary Highways

502	Napanee west.....	.....	1958	.....	.....	1,000
274	Madoc southerly 2.74 mi.....	2.74	1958	.....	2.74	6,448
TOTALS.....		85.26		6.40	60.12	370,640

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
7 T.C.	Perth to Bathurst.....	6.9	45,652	670.4
7 T.C.	Hwy. 38 westerly.....	7.1	47,685	313.8
29, 401	Brockville north interchange.....	1.0	4,625	115.5
401	6.63 mi. east of Moira River easterly.....	6.07	25,012	578.5
TOTALS.....		21.07	122,974	1,678.2

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
2	Connecting link — Town of Napanee.....	0.12	327
14, 37	Belleville city limits to 401 interchange.....	1.93	2,010
TOTALS.....		2.05	2,337

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
32	Gananoque to Seeley's Bay (N. Limits of Gananoque to Hwy. 15).....	11.0	29,802	1,247
41	Kaladar to Erinsville (Hwy. 7 at Kaladar southerly)....	13.8	35,889	1,749
42	Forfar to Delta (South of Forfar to Delta).....	6.4	16,694	678
TOTALS.....		31.2	82,385	3,674

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
32	Gananoque River, approx. 2.8 mi. north of Hwy. 2.....	1958	1958	Old abuts., bailey bridge
401	Salmon River in Tyendinaga Twp.....	1956	1958	Conc. abuts., steel beams
401	Hwy. 32, bridge Hwys. 401 and 32.....	1956	1958	Rigid frame
401	Gananoque River, Leeds Twp. bridges 2 and 3 over river and C.N.R. Rly....	1956	1958	Conc. abut., steel beams
401	Underpass 29 and 42, Elizabethtown Twp. bridge 10A.....	1958	1958	Rigid frame, box beam
401	Lyn Road overpass, Elizabethtown Twp. bridge 7.....	1957	1958	Rigid frame
401	C.N.R. overpass, Elizabethtown Twp. bridge 8.....	1957	1958	Rigid frame
401	C.P.R. overpass, Elizabethtown Twp. bridge 12.....	1957	1958	Rigid frame

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
2	C.P.R.	Toronto, 107.1 mi.....	2 lights, 1 bell ¹
14	C.N.R.	Rawdon Twp., Hastings County.....	2 lights, 1 bell ¹

¹Installed 1958 replacing 2 wigwags, west of Belleville.

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Compl.
2	4.3 mi. west of Kingston (Previously part of former District Garage moved to new site).	Patrol H.Q.	1958	1958
15	3.5 mi. south of Smiths Falls (Std. office addition for 4-bay patrol garage).....	Patrol H.Q.	1958	1958
15, 401	On city road, 0.7 mi. east of Hwy. 401 and Hwy. 15 interchange (Std. office addition for 4-bay patrol garage).....	Patrol H.Q.	1958	1958
401	0.7 mi. west of Hwy. 16.....	Scale house	1957	1958
7	0.6 mi. west of Arden Road (Two sheds).....	Salt shed	1958	1958
15	3.4 mi. north of Seeley's Bay.....	Salt shed	1958	1958
401	Sydney St. interchange.....	Salt shed	1958	1958
502	0.7 mi. east of Marysville (Two sheds).....	Salt shed	1958	1958

New District Garage at Counter St., Kingston

District garage.....	District garage and stores	1957	1958
Heated storage.....	Heated storage	1957	1958

Totals of Other Work Done in District No. 8

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	5		
Calcium dust layer on gravel roads.....		5.0	2.5
Calcium for de-icing roads.....			
Development roads built.....			
Off-road parks maintained.....	1		
Roads snowplowed and kept open, King's Highways.....	14		603.22
Roads snowplowed and kept open, secondary highways.....	2		14.45
Roadside picnic places maintained.....	82		
Routine maintenance, King's Highways.....			603.22
Routine maintenance, secondary highways.....			14.45
Salt for de-icing roads (raw).....		14,512.65	617.67
Salt in sand, stockpiled.....		2,755.00	
Sand for winter maintenance.....		29,375.80	
Scale houses maintained.....	1		
Seeding by Department's forces.....(sq. yds.)	2,720,080		
Shrubs received and planted this year.....	6,612		
Signs erected or replaced.....	2,885		
Snow fence erected, dismantled, stored.....			31.67
Traffic lights installed this year.....	1		
Weed control.....			786.8
Zone painting on King's Highways.....(gals.)	10,570		972.8
Zone painting on secondary highways.....(gals.)	66		15.7



Highway 401 at junction with Highway 15. Kingston District.

April 1, 1958 to March 31, 1959

FERRY "QUINTE"						FERRY "QUINTE LOYALIST"						TOTALS	
YEAR	MONTH	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	YEAR	MONTH	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL
1958	April	30	350	1,981	59	2,040	1958	April	30	973	11,299	981	12,280
	May	31	701	5,702	361	6,063		May	28	880	10,169	803	10,972
	June	30	885	8,326	458	8,784		June	28	930	11,413	682	12,095
	July	31	921	10,877	383	11,260		July	31	1,100	17,825	690	18,515
	August	31	937	11,725	376	12,101		August	31	1,086	19,163	743	19,906
	September	30	826	6,890	419	7,309		September	30	989	11,241	867	12,108
	October	31	874	6,865	536	7,401		October	31	1,000	10,749	1,031	11,780
	November	30	802	4,103	367	4,470		November	30	920	7,366	714	8,080
1959	December	31	273	697	45	742	1959	December	31	967	8,210	742	8,952
	January	29	899	5,613	516	6,129		January	7*	234	1,676	123	1,799
	February	28	1,097	7,193	660	7,853		February	.....*	.....	.....	.....	.....
	March	28	1,006	7,673	596	8,269		March	.....*	.....	.....	.....	.....
		360	9,571	77,645	4,776	82,421			277	9,079	109,111	7,376	116,487

* Ferry "Quinte Loyalist" out of service after January 7, 1959 due to reconstruction of landing stage.

Peak Traffic — Quinte: July 13 — 49 trips		Peak Traffic — Quinte Loyalist: July 27 — 46 trips	
921 cars, nil trucks		1,093 cars, 2 trucks	
Summary —		Summary —	
Total days worked.....		Total days worked.....	
Total trips.....		Total trips.....	
Total cars carried.....		Total cars carried.....	
Total trucks carried.....		Total trucks carried.....	
360		277	
9,571		9,079	
77,645		109,111	
4,776		7,376	

DISTRICT No. 9—OTTAWA**G. F. WETHERALL, P. Eng., District Engineer****Construction**

Three granular base and hot mix paving contracts, totalling 18 miles in length, were completed in the Morrisburg-Iroquois area on Highway 2 this fiscal year. This work now completes the 37-mile Highway 2 relocation made necessary by the construction of the St. Lawrence Seaway.

Construction of the eastern extension and stage one of the four-lane divided Ottawa Queensway was started this year with 5.5 miles under contract for grading and culverts. Within this section, there are five separate structures under tender consisting of three interchanges and two underpasses.

On stage two of the Ottawa Queensway in the city's west end, the Carling-Kirkwood Interchange, consisting of three structures, relocation of a portion of four-lane Carling Avenue and building of fill approaches and interchange legs, was started this year.

On the Trans-Canada section of Highway 15, in the Perth-Innisville area, the Innisville by-pass, including a new bridge over the Mississippi River, was opened to traffic in December, 1958. In November, 1958, a 7.5 mile contract for grading, culverts and granular base, on relocated Highway 15, Perth to Drummond Centre was opened to traffic.

Maintenance

This year approximately 18 miles of highway were surface treated with sand seal which was fairly effective in sealing a badly alligatored pavement.

Winter maintenance was heavy this year, two new four-ton, four-wheel drive trucks were used to good advantage and gave good results. The new five-ton, four-wheel drive truck proved to be an excellent snow plow unit, two five-ton tandem drive trucks were used to good advantage on snowplowing and are also good summer maintenance vehicles. Three shifts were employed on winter plowing work, giving 24-hour coverage. The two night shifts also patrolled the road when not plowing, thus winter maintenance forces were



Highway 2, facing west at Morrisburg, Ottawa District.

used to better advantage. Four crews were employed to carry out the three shifts on a rotation basis thus keeping overtime to a minimum.

Considerable work was done on developing the new district yard, grading and gravelling and landscaping the yard area. Zone painting was carried out throughout the district with heavily travelled highways repainted late in the season to ensure good markings throughout the winter.

An accelerated program of forestry was carried out with new grades being seeded, many trees planted and dead and dangerous trees removed.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
43	Monkland easterly 5.5 mi.....	5.50	1957	5.40	.10
2	Aultsville county road westerly.....	7.85	1957	7.15	.70
2	Iroquois to 2 mi. west of Morrisburg.....	4.80	1957	3.22	.68
2	1¼ mi. east of Hwy. 31 to Cont. 56-198....	4.80	1957	3.94	.86
15 T.C.	Perth to Drummond.....	7.50	1957	2.55	4.95
17	Foundations and approaches to scale house, 1 mi. west of Alfred.....	0.14	1957	.03	0.11
17	North of Haley's Station to north of Cobden.....	8.12	1958	.....	.....
15 T.C.	Mississippi River bridge at Innisville.....	1.06	1958	.....	.....
Q'way	Nicholas St. extension.....	0.60	1958	.....	.....
17 T.C.	East limits of St. Laurent Blvd. to west limits Montreal Rd.....	3.57	1958	.....	.....
Q'way	Hurdman's Bridge to St. Laurent Blvd.....	1.70	1958	.....	.....
15 T.C.	C.P.R. overhead at Carleton Place (Detour)	.08	1958	.....	.....
Q'way	Carling Ave. interchange.....	.76	1958	.....	.....
401	Raisin River bridge.....	.76	1958	.....	.....
15	1 mi. west of Bell's corners.....	0.45	1958	.....	0.45
401	Cardinal to Iroquois.....	5.08	1958	.....	.....
17 T.C.	Montreal Rd. structure and approaches.....	.....	1958	.....	.....
401	Hwy. 16, Cardinal.....	5.08	1958	.....	.....
401	St. Andrews Rd. to Summerstown Co. Rd.	7.30	1958	.....	.....
TOTALS.....		65.15		22.29	7.85

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
43	Monkland easterly.....	5.50	1957	4.70	.80	10,981.29
2	Aultsville county road westerly.....	7.85	1957	5.83	2.02	31,077.50
2	Iroquois to 2 mi. west of Morrisburg.....	4.80	1957	1.01	3.79	31,960.92
2	1¼ mi. west Hwy. 31 easterly to west limits of Cont. 56-198, Cont. 57-125.....	4.80	1957	3.12	1.68	19,733.79
15 T.C.	Perth to Drummond Centre.....	7.50	1957	1.35	6.15	56,789.00
17 T.C.	Cyrville Road bridge.....	0.50	1957	.....	.50	2,348.63
17	Foundations and approaches for D.H.O. weigh scales in Alfred.....	.....	1957	.....	.....	1,140.31
15 T.C.	Mississippi River bridge at Innisville.....	1.06	1958	.....	.....	5,977.00
Q'way	Ottawa Queensway, Nicholas Street extension.....	0.60	1958	.....	.....	3,015.00
15	1 mi. west, Bell's Corners.....	0.45	1958	.....	0.45	1,820.33
TOTALS.....		33.06		16.44	15.39	164,843.77



Bridge being constructed over the Mississippi River near the Carlton Place By-pass on Highway 15
Trans-Canada, Ottawa District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
43	Monkland easterly, 5.5 mi.....	3.29	4,260.47
2	Aultsville country road westerly.....	6.12	21,638.21
2	1½ mi. west of Morrisburg to west Cont. 56-198.....	4.8	18,223.82
2	Iroquois to 2 mi. west of Morrisburg.....	7.5	
17	Foundations and approaches to scale house 1 mi. west of Alfred.....		518.37
15 T.C.	Mississippi River bridge at Innisville.....	1.06	1,400.00
17 T.C.	Cyrville Road bridge.....	.43	450.81
15	1 mi. west of Bell's Corners.....	.45	286.38
Q'way	Nicholas Street extension.....	.60	125.00
TOTALS.....		24.25	63,595.37

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
17 T.C.	Hawkesbury to Alfred.....	15	9,993.00

Concrete Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Sq. Yds. Placed 1958-59	Pavement Width
Q'way	Nicholas Street Extension.....	.60	1958	.....	0.09	850	24 feet

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
15 T.C.	Ashton overhead.....	.53	1955	.53	.....	.....
43	Monkland easterly.....	5.50	1957	3.85	1.65	8,601.59
2	From Aultsville county road westerly.....	7.80	1957	.....	7.80	25,704.00
2	Iroquois to 2 mi. west of Morrisburg.....	4.80	1957	.....	4.80	15,754.23
17 T.C.	Cyrville Rd. bridge.....	.....	1957	.....	.....	1,356.97
Q'way	Carling Ave. interchange.....	.76	1958	.....	.....	405.30
Q'way	Nicholas St. extension.....	.06	1958	.....	.....	200.00
15	1 mi. west of Bell's Corners.....	.45	1958	.....	.45	720.38
17	Approaches to scale house 1 mi. west of Alfred.....	0.14	1957	0.14	.....	.....
TOTALS.....		20.04		4.52	14.70	52,742.47

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
17	Arnprior to Carp Sectional Resurfacing.....	6	5,989

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
29	Smiths Falls to Carleton Place	18	32,945	1,876.7

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
15 T.C.	Mississippi River at Innisville.....	1958	1958	Composit. concrete and Structural steel
17	Cyrville Road over Hwy. 17.....	1957	1958	Reinforced concrete
2	Hoasic Creek bridge, east of Morrisburg	1957	1958	Reinforced concrete



Highway 43 at Monkland showing new curbs, grading, etc., Ottawa District.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	County	Twp. Name	Location		Flash. Lights Bell	Type	Short Arm Bell
				Lot No.	Con. No.			
17	C.N.R.	Renfrew	McNab	19	7	X		
15 T.C.	C.N.R.	Carleton	Nepean	7	5	X		
15	C.P.R.	Carleton	Goulbourn	23	10	X		
43	C.P.R.	Stormont	Roxborough	12	2	X		

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	Building Completed
29	Almonte.....	Bulk salt storage	1958	October 1958
31	Greely.....	Bulk salt storage	1958	September 1958
31	Morrisburg.....	Bulk salt storage	1958	August 1958
43	Winchester.....	Bulk salt storage	1958	August 1958

Totals of Other Work Done on District No. 9

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	4		
Off-road parks maintained.....	5		
Roads snowplowed and kept open, King's Highways.....	10		578.08
Roads snowplowed and kept open, Secondary Highways.....	2		41.60
Routine maintenance, King's Highways.....			578.07
Routine maintenance, Secondary Highways.....			41.60
Salt for de-icing roads (raw).....		14,558	578.07
Salt in sand, stockpiled.....		640	
Sand for winter maintenance.....		9,365	
Scale houses maintained.....	1		
Seeding by Department's Forces..... (sq. yds.)	1,975,000		
Signs erected or replaced..... (G.A.)	3,985		
Traffic lights installed this year..... (G.A.)	1		
Weed control..... (E.H.)			687.00
Zone painting on King's Highways..... (G.A.)			863.00
Zone painting on Secondary Highways.....			14.00



Section of relocated Highway 2 one mile east of Morrisburg, Ottawa District.

DISTRICT No. 10—BANCROFT**T. A. SHARPE, P.Eng., District Engineer****Construction**

One major structure at Apsley, Secondary Road 504, and two small structures at Bon Echo, Highway 41, and Byers Creek, Highway 62, were completed. The bridge at Apsley eliminated a Bailey bridge and greatly eased the flow of traffic.

Grading from Deacon to Golden Lake, on Highway 60, and grading and paving from Shamrock to Renfrew, on Highway 132, were completed.

Maintenance

Day labour projects started include a revision to Highway 41 from the junction with Highway 60 for $1\frac{1}{4}$ miles northerly, and a diversion on Highway 127 of approximately 0.8 miles.

Additional salt sheds were constructed at Whitney and Eldorado thus eliminating for the most part the use of bagged salt. These salt sheds are of a permanent type with excellent appearance and durability.

Approximately 5,800 seedlings and trees supplied by Department of Land and Forests were planted and several thousand transplants were made along the existing right-of-way with excellent results. Most of the transplants are for snow hedges with the balance for general beautification of the Department property, including picnic sites.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
41	Jct. Hwy. 60 northerly.....	1.25	1958	.....	.....
60	1.5 mi. east of Deacon to Golden Lake.....	6.70	1957	.....	6.70
62	Byer's Creek to Combermere.....	0.11	1958	.....	0.11
127	3.7 mi. north to 5.0 mi. north Lake St. Peter..	1.30	1958	.....	1.30
132	Shamrock to Renfrew.....	6.83	1958	.....	6.83
504	Eel's Creek at Apsley.....	0.60	1958	.....	0.60
506	7 mi. east of Hwy. 41.....	0.10	1958	.....	0.10
TOTALS.....		16.89		.....	15.64

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
41	Jct. Hwy. 60 northerly.....	1.25	1958	.....	.....	28,050
60	Deacon to Golden Lake.....	6.70	1957	.....	6.70	215,556
62	Byer's Creek to Combermere.....	0.11	1958	.....	0.11	3,908
127	3.7 mi. north to 5.0 mi. north Lake St. Peter.....	1.30	1958	.....	1.30	19,950
132	Shamrock to Renfrew.....	6.83	1958	.....	6.83	65,636
504	Eel's Creek at Apsley.....	0.60	1958	.....	0.60	6,041
TOTALS.....		16.79		.....	15.54	339,141



Mulch on Highway 60 just east of Wilno, Bancroft District.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
504	11 mi. east of Apsley to 14 mi. east of Apsley	3	1958	...	3	900
620	5 mi. west of Jct. Hwy. 62 to 7 mi. west of Jct. Hwy. 62	2	1958	...	2	750
TOTALS		5			5	1,650

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location		Total Miles 1958-59	Tons Placed 1958-59
28	Vicinity of Apsley	Stockpiled	.....	14,990
28	Bancroft patrol yard	Stockpiled	.....	15,000
41	Vicinity of Denbigh and Griffith	Stockpiled	.....	14,518
60	1.5 mi. east of Deacon to Golden Lake	Placed on Road	6.7	10,625
62	Vicinity of Pembroke and Round Lake	Stockpiled	.....	15,000
62	Jct. Hwy. 62 and Secondary Road 620	Stockpiled	.....	9,970
62	Byer's Creek	Placed on Road	0.11	500
504	El's Creek bridge	Placed on Road	0.60	2,445
TOTALS			7.41	83,048

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
41	Jct. Hwy. 60 northerly	1.25	1,500
127	3.7 mi. north to 5.0 mi. north Lake St. Peter	1.30	3,000
504	11 mi. east of Apsley to 14 mi. east of Apsley	3.00	800
620	5 mi. west of Jct. Hwy. 62 to 7 mi. west of Jct. Hwy. 62	2.00	1,500
TOTALS		7.55	6,800



Paving and zone striping on Highway 41 south of Eels Creek, Bancroft District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
41	MacAvoy Lake to Kilpecker Cr...	4.92	1957	.....	4.92	4,809
41	Golden Lake to Eganville.....	8.20	1958	.....	8.20	19,657
132	Shamrock to Renfrew.....	6.83	1958	.....	6.83	13,500
TOTALS.....		19.95		.....	19.95	37,966

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles in Project	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
60	2¼ mi. east of Wilno.....	0.25	.....	0.25	413
127	1.3 mi. north to 3.3 mi. north Lake St. Peter..	2.00	.....	2.00	3,300
620	Jct. Hwy. 62 westerly 7 mi.....	7.00	.....	7.00	11,550
TOTALS.....		9.25	.....	9.25	15,263

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
41	Jct. Hwy. 60 north 1.4 mi.....	1.4		
127	Lake St. Peter to Whitney.....	17.7		
132	Dacre to Shamrock.....	6.6		
500	Haliburton Bdy. to Hermon.....	25.5		
504	Apsley to Glen Alda to Apsley.....	29.9		
506	Jct. Hwy. 41 to Plevna.....	22.1		
513	Dacre to Caldwell.....	9.2		
515	Combermere to Quadville.....	17.1		
521	Killaloe to Round Lake.....	11.5		
517	Combermere to Carlow Twp. Rd.....	9.9		
523	Madawaska to Lyell-Wicklow Twp. Line.....	13.1		
620	Jct. Hwy. 62 to Glen Alda.....	12.0		
TOTALS.....		176.0	446,403	8,628.70

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
28	Jct. Hwy. 36 north	11.68	38,906	1,720.40
60	Barry's Bay westerly	34.89	87,651	3,668.80
62	Bancroft south	12.00	30,033	1,167.70
TOTALS		58.57	156,590	6,556.90

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
504	Eel's Creek at Apsley By-pass	1958	1958	Concrete abutments, Steel girders, Concrete deck

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Completed
41	Denbigh patrol yard	28' x 36'	1958	December 1958
60	Whitney patrol yard	28' x 36'	1958	March 1959
62	Eldorado patrol yard	28' x 36'	1958	March 1959
62	Maynooth patrol yard	28' x 36'	1958	November 1958

Totals of Other Work Done on District No. 10

Item	Total Number	Total Tons	Total Miles
Bridges painted	6	.....	.....
Calcium dust layer on gravel roads .....	.....	30.45	17.3
Off-road parks maintained	6	.....	.....
Roads snowplowed and kept open, King's Highways	7	.....	397.43
Roads snowplowed and kept open, Secondary Highways	11	.....	173.79
Roadside picnic places maintained	8	.....	.....
Routine maintenance, King's Highways .....	.....	.....	397.43
Routine maintenance, Secondary Highways .....	.....	.....	173.79
Salt for de-icing roads (raw) .....	.....	2,326.5	397.43
Salt in sand, stockpiled .....	.....	2,148.5	.....
Sand for winter maintenance .....	.....	41,224.5	.....
Scale houses maintained	2	.....	.....
Seeding by Department's Forces (sq. yds.)	590,480	.....	.....
Shrubs received and planted this year	5,825	.....	.....
Signs erected or replaced	2,654	.....	.....
Snow fence erected, dismantled, stored .....	.....	.....	19.89
Weed control .....	.....	.....	188
Zone painting on King's Highways (gals.)	6,096	.....	362.87
Zone painting on Secondary Highways (gals.)	612	.....	28.60

DISTRICT No. 11—HUNTSVILLE**H. C. DERNIER, P.Eng., District Engineer****Construction**

Extremely cold weather and deep snow seriously handicapped construction work during the winter months. Paving was completed on Highway 103 from Waubauskene to Footes Bay except for one mile in the vicinity of Port Severn where three bridges are being constructed under contract 57-85. It is expected that this Port Severn By-pass will be opened early in the summer of 1959. The South Orillia By-pass was paved and opened to traffic this year.

Grading was completed from Nobel to Pointe-au-Baril and this section of the Trans-Canada Highway is scheduled to be paved in 1959. Grading was also done on two lanes of Highway 400 from Coldwater south 14 miles, this section is also to be paved in 1959.

A 14-mile section of Highway 60 from the junction of Highway 35 to the Algonquin Park gates was resurfaced with light granular lifts and super elevation of curves. This work improved the riding qualities of the road appreciably.

Three grading contracts are in progress in the vicinity of Highland Grove, Bicroft Mine and Dyno Mine. When these jobs are completed in 1959, access to this mining area will be greatly improved.

Grading was completed on the Huntsville By-pass. When bridges are completed and this five-mile section of new road is paved, north-south traffic should flow much more readily through this area.

Maintenance

One outstanding phase of maintenance operations in this district during the past fiscal year was the Day Labour construction carried out under the Winter Unemployment Relief Program. Eight separate road construction jobs were going plus two separate operations covering the construction of picnic sites on T.C.H. and on various other highways in the District. This Winter Relief program employed between 250 and 300 men for most of the winter.

The District carried out an experimental operation on treatment of two severe frost heaves on Highway 11 near Novar. These bumps appeared regularly with the spring thaw. We used a commercial product in the form of a liquid which was pumped into two-inch holes drilled in the pavement. The results were very good — only the one heave appeared, and it was very slight this year.

One mile of shoulder stabilization was undertaken on Highway 11 south of Gravenhurst. The shoulders in this section were very sandy material which had a very low bearing capacity and required continual maintenance to keep in proper condition. Limestone screenings were added and mixed in with a pulvimixer together with various quantities of sodium chloride, calcium chloride on different 500-foot sections of shoulders. This work was done in the fall and the immediate results looked good. However, this spring there didn't appear to be any outstanding improvement in shoulder conditions.



Ahmic Harbour revision and by-pass on Highway 124 done by D.H.O. forces, Huntsville District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
69 T.C.	Nobel to Shawanaga.....	9.9	1957	.....	9.9
400	Craighurst northerly.....	7.0	1958	.....	7.0
400	Coldwater south.....	7.0	1958	.....	5.0
69 T.C.	1.5 mi. south of Shawanaga river to 1.5 mi. north of Pointe-au-Baril.....	8.5	1957	4.5	4.0
11	Hwy. 11 to Big East River (Huntsville By-pass).....	5.16	1957	3.0	2.16
118	Baysville diversion.....	0.83	1957	0.42	0.41
109	Crowe River to Monck Lake.....	4.85	1957	.....	3.78
111	Monck Lake to Highland Grove.....	5.90	1957	.....	4.34
103 T.C.	Moon River (revision).....	1.30	1957	0.32	0.98
109	Dyno Mines to Monck Lake.....	4.40	1958	.....	1.94
121	Minden to Haliburton.....	14.55	1958	.....	3.66
11	Hwy. 400 to road allowance between Cons. 8 and 9, Twp. of Oro.....	6.87	1958	.....	0.41
124	Ahmic Harbour By-pass..... (Day Labour)	1.5	1958	.....	1.5
532	Broad River 1.8 mi. easterly (Day Labour)	1.8	1958	.....	1.8
518	Hwy. 69, Orrville..... (Day Labour)	2.0	1958	.....	2.0
500	Irondale By-pass..... (Day Labour)	3.0	1958	.....	.....
TOTALS.....		84.56		8.24	48.88

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
519	Haliburton to Redstone Lake..	9.0	1958	.....	9.0	40,000
518	Hwy. 11 to Sprucedale.....	7.1	1958	.....	7.1	11,000
TOTALS.....		16.1		.....	16.1	51,000

Granular Base Laid on New Grading

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
532	Broad River to 1.75 mi. east....	1.75	1958	.....	1.75	13,500

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
69	Carling Turn to Secondary Road 529.....	25	32,500
124	McKellar to Magnetawan.....	25	11,000
500	Tory Hill to 12 mi. west.....	12	16,000
518	Hwy. 11 to Sprucedale.....	8	10,000
519	Haliburton to Redstone Lake.....	13	25,000
520	Burks Falls to 3 mi. east Magnetawan.....	12	10,000
520	Dunchurch to Ardbeg.....	16	4,000
532	Broad River to 4 mi. east.....	4	15,000
518	Sprucedale to Hwy. 69.....	33	15,000
519	Hwy. 121 at Haliburton to Jct. Hwy. 519 and 121.....	20.6	10,000
530	Hwy. 35 to Secondary Road 519.....	12.0	10,000
TOTALS.....		180.6	158,500

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
11	Crown Hill to 4 mi. north Burks Falls.....	101.5	837
12	Atherley Narrows T.C.H. to Midland.....	35.0	168
35	Hwy. 60 to Victoria County boundary.....	57.4	415
60	Hwy. 11 to Algonquin Park headquarters.....	41.8	750
69	Gravenhurst T.C.H. to Jct. with Secondary Road 529.....	87.4	8,393
118	Glen Orchard to Dorset.....	50.3	130
121	Kinmount to Tory Hill.....	39.9	726
124	Hwy. 69 to Jct. Secondary Road 510.....	37.3	18,006
500	Kinmount to 5 mi. east of Highland Grove.....	48.0	887
501	Port Severn to Honey Harbour.....	9.2	312
514	Hwy. 60 to Interlaken.....	10.0	246
516	Hwy. 11 to Windermere.....	15.7	54
518	Hwy. 69 to Kearney.....	48.0	2,568
519	Haliburton to Hwy. 121.....	21.6	10,500
520	Magnetawan to Hwy. 124.....	16.5	300
520	Dunchurch to Ardbeg.....	16.5	2,946
527	Huntsville to Baysville.....	14.9	68
530	Hwy. 35 to Secondary Road 519.....	12.3	4,920
532	Hwy. 69 to Hwy. 11 at Muskoka Falls.....	44.5	1,955
TOTALS.....		707.8	54,181

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	2 mi. north of Orillia.....	0.13	1957	.....	0.13	1,062.63
118	Baysville diversion.....	0.83	1957	.....	0.83	2,849.00
35	North Branch Muskoka River at Dorset.....	2.50	1957	.....	2.50	7,586.66
12 T.C.	South Orillia By-pass.....	3.03	1958	.....	3.03	12,007.89
103 T.C.	Waubashene to Gibson River.....	17.27	1958	.....	17.27	64,220.14
103 T.C.	Gibson River to Footes Bay.....	11.92	1958	.....	11.92	45,765.37
60	Jct. Hwys. 35 and 60 to Algon- quin Park gate.....	12.60	1958	.....	12.60	24,281.54
12	Waubashene to Midland.....	11.75	1958	.....	11.75	12,637.49
TOTALS.....		60.03			60.03	170,410.72



Rock cut on grading contract on Highway 69, Huntsville District.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
121	Tory Hill to 3.5 mi. northwesterly	3.5	.....	3.5	5,250
500	Tory Hill to vicinity of Gooderham.....	12.0	.....	12.0	18,000
518	Sprucedale to Hwy. 11.....	7.1	.....	7.1	10,650
532	Hwy. 69 to 4.1 miles easterly.....	4.1	.....	4.1	6,150
	TOTALS.....	26.7	.....	26.7	40,050

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
69	Carling Turn to Jct. Secondary Road 529.....	16.0	45,933	1,171.20
121	Foxes Corners to Tory Hill.....	10.0	28,600	732.00
124	McKellar to Jct. of Secondary Road 510.....	23.6	67,496	1,727.52
103	Hwy. 12 to Port Severn.....	2.3	6,578	168.36
518	Hwy. 69 to Sprucedale.....	33.1	94,660	2,412.92
529	Hwy. 69 to Bayfield Inlet.....	3.0	8,580	219.60
532	Hayes Corners to 2 mi. west Rosseau.....	10.0	28,600	732.00
520	Magnetawan to Jct. of Hwy. 124.....	1.9	5,434	139.08
520	Dunchurch to Ardbeg.....	16.5	47,190	1,207.60
501	Port Severn to Honey Harbour.....	9.1	26,062	666.12
500	Irondale to Hastings County boundary.....	34.0	97,240	2,488.53
519	Eagle Lake to Redstone Lake.....	4.1	11,726	300.12
514	Hwy. 60 to Interlaken.....	10.0	28,600	732.00
530	Hwy. 35 to Jct. of Secondary Road 519.....	12.0	34,220	878.40
519	1.5 mi. south of Haliburton to Hwy. 121.....	19.4	55,484	1,414.50
	TOTALS.....	205.0	586,503	14,989.95

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
11	Vicinity of Burks Falls.....	0.5	750
519	Haliburton to Redstone Lake.....	8.9	13,350
532	Rosseau to 2.6 mi. westerly.....	2.6	3,900
520	Magnetawan to Burks Falls.....	3.0	4,500
TOTALS		15.0	22,500

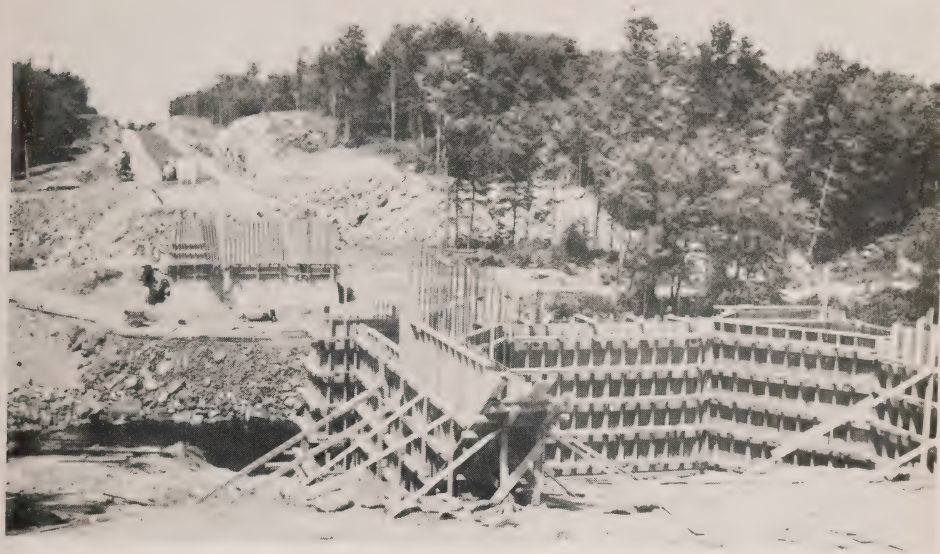
Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
35	Partridge Lake to Carnarvon.....	8.7	21,301.08	957.00
35	Hwy. 60 to Dorset.....	10.5	25,708.20	1,156.05
118	Dorset to Baysville.....	16.0	39,174.40	1,761.60
Old 11	Jct. Hwy. 532 to Hwy. 11.....	7.8	19,097.52	858.64
518	Elmsdale to Kearney.....	5.0	12,242.00	550.50
TOTALS.....		48.0	117,523.20	5,283.79

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
11	C.P.R. Overhead, Lot 2, Con. 3, Twp. of South Orillia..	1957	1958	Deck
11, 12	South Orillia Underpass, Lot 10, Con. 10, Twp. of South Orillia.....	1957	1958	Girder
35	Dorset bridge, Lot 30, Con. A, Twp. Sherborne (Dorset By-pass).....	1957	1958	Girder
118	Baysville bridge, Lot 16, Con. 7, Twp. of McLean.....	1957	1958	Girder
11	North C.N.R. Overhead, Lot 2, Con. 3, Twp. of Chaffey, Huntsville By-pass.....	1957	*	Girder
11	Big East River bridge, Lot 18, Con. 7, Twp. of Chaffey, Huntsville By-pass.....	1957	*	Girder
400	Coldwater River bridge, Lot 19, Con. 11, Twp. of Medonte.....	1958	†	Girder
69 T.C.	Shawanaga River bridge, I.R. 17 and 15, Con. 8, Twp. of Shawanaga.....	1958	†	Girder
103 T.C.	Muskoka River bridge, Lot 15, Con. 10, Twp. of Gibson.....	1957	1958	Girder
103 T.C.	Severn River bridge, Lot 18, Con. 12, Twp. of Tay.....	1957	*	Girder
103 T.C.	Severn River overflow bridge, Lot 28, Con. 2, Twp. of Baxter.....	1957	*	Girder
103 T.C.	Severn River boat channel, Lot 27, Con. 2, Twp. of Baxter.....	1957	*	Girder
103 T.C.	Matchedash Bay bridge, Lot 10, Con. 11, Twp. of Tay.....	1957	1958	Girder
103 T.C.	C.N.R. Overhead, Lot 9, Con. 11, Twp. of Tay, (Waubashene).....	1957	1958	Girder
12	C.N.R. Overhead, Lot 11, Con. 4, Twp. of South Orillia, (South Orillia By-pass).....	1957	1958	Deck Girder
12 T.C.	Coldwater River bridge, Lot 21, Con. 11, Twp. of Medonte.....	1958	†	Girder
69 T.C.	Briar Creek bridge, Lot 1, Con. 1, Twp. of Carling.....	1957	*	Girder
11	South C.N.R. Overhead, Lot 18, Con. 1, Twp. of Chaffey (Huntsville By-pass).....	1958	†	Girder
103 T.C.	Moon River bridge, Lots 12 and 13, Con. 14, Twp. of Gibson.....	1958	†	Girder
11	Vernon Narrows, Across Vernon Narrows (Huntsville By-pass).....	1957	†	Girder

* Not paved (Completed in 1958). † Under construction.



Moon River Bridge under construction on Highway 103, 20 miles north of Port Severn, Huntsville District.

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	Completed
35	Minden, Lot 5, Con. 12, Twp. of Lutterworth, County of Haliburton, 36'8" x 28'8"	Salt storage	1958	May 1959

Totals of Other Work Done on District No. 11

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		431	203
Off-road parks maintained.....	6		
Roads snowplowed and kept open, King's Highways.....			502.8
Roads snowplowed and kept open, Secondary Highways.....			273.0
Roadside picnic places maintained.....	61		
Routine maintenance, King's Highways.....			502.8
Routine maintenance, Secondary Highways.....			273.0
Salt for de-icing roads (raw).....		5,827.5	
Salt in sand, stockpiled.....		3,422.5	
Sand for winter maintenance.....		105,625	
Scale houses maintained.....	2		
Seeding by Department's Forces..... (sq. yds.)	735,680		
Signs erected or replaced.....	2,412		
Snow fence erected, dismantled, stored.....			70.14
Weed control.....			465
Zone painting on King's Highways..... (gals.)	7,553		447
Zone painting on Secondary Highways..... (gals.)	1,841		120



Dorset By-pass section of Highway 35, Huntsville District.



Grading and culvert at Murdock River on Highway 64, North Bay District.

DISTRICT No. 13—NORTH BAY**J. D. FOSTER, P.Eng.—District Engineer****Construction**

In November 1958, a new overhead at the C.N.R., at Nipissing Junction, Highway 11, was opened to traffic. This structure has eliminated a dangerous level crossing.

On Highway 17, about two miles west of Mattawa, a three-mile grading and hot mix contract was completed and the section was opened to traffic. This new road has eliminated an extremely steep hill, which was arduous for truck traffic. From Highway 11 to Highway 94, on Highway 17 — seven miles — grading and culvert contract was completed in preparation for a hot mix contract, which will be completed in the summer of 1959. A $\frac{3}{4}$ -mile granular lift and rehabilitation was commenced by day labour on Highway 17, approximately eight miles west of Deep River. The mulch pavement is to be laid in summer of 1959.

The greater portion of a mile of grading and culverts was completed by day labour on Secondary Highway 535, approximately three miles south of Hagar.

During the winter months pre-contract clearing was carried out on approximately 35 miles of highway. This helped to relieve unemployment where existent.

Maintenance

The following work was carried out by day labour: 8 miles of granular lift; 12 miles of mulch paving; 52 miles of prime dust layer; 24 miles of surface treating old pavements; 40,000 cubic yards of sand screened for winter maintenance; 2 Standard weigh scale sites were constructed by district forces and put into use by the Department of Transport.



Nipissing Junction channelization and overhead signs at junction of Highways 11 and 11B where through traffic by-passes North Bay.



Highway 17 revision to Mattawa Hill, west of Mattawa, North Bay District.

A winter work program was organized to relieve unemployment and several miles of right-of-way were cleared. Construction work by Day Labour Forces, on a two-mile reversion at Commanda was nearly completed.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
11	Burford Hill-Callender to 2.4 mi. north....	2.4	1958	.....	1.5
11	Nipissing Junction overhead.....	0.7	1958	.....	.7
17	Highway No. 11 to Corbeil Corners - Jct. 94.....	6.7	1958	.....	6.7
17	3 mi. west of Mattawa to 6 mi. west.....	3.0	1958	.....	3.0
17	4 mi. west of Pt. Alexander to 4.75 mi. west.....	.75	1958	.....	.56

Secondary Highways

535	Hagar to St. Charles.....	1.0	1958	.....	.8
522	Commanda to 1.5 mi. west.....	1.5	1958	.....	.5
TOTALS.....		16.05		.....	13.76

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	Burford Hill-Callender to 2.4 mi. north.....	2.4	1958	.....	1.5	265,746
11	Nipissing Junction overhead.....	0.7	1958	.....	0.7	42,541
11	Weigh Scales-Nipissing Jct.....	0.3	1958	.....	.30	4,402
17	Hwy. 11 to Corbeil Corners- Jct. 94.....	6.7	1958	.....	6.7	273,785
17	3 mi. west of Mattawa to 6 mi. west.....	3.0	1958	.....	3.0	39,668
17	Weigh scales-North Bay by-pass.....	.3	1958	.....	.3	10,854
17	Weigh scales-Petawawa.....	.3	1958	.....	.3	2,656
17	4 mi. west of Pt. Alexander to 4.75 mi. west.....	.75	1958	.....	.56	39,099

Secondary Highways

535	Hagar to St. Charles.....	1.0	1958	.....	.8	12,015
522	Commanda to 1.5 mi. west.....	1.5	1958	.....	.5	61,578
TOTALS.....		16.95		.....	14.66	752,344



Standard weigh scales on Highway 17 south of Petawawa. This is one of the three scales constructed in North Bay District in 1958.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
64	Field to 3 mi. south.....	3	1958	.....	3	25,314

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
11	Nipissing Junction overhead.....	0.7	9,497
17	Jct. Hwy. 11 to Corbeil Corners, Jct. Hwy. 94.....	6.7	78,553
17	3 mi. west of Mattawa to 6 mi. west of Mattawa.....	3	39,669
64	2.5 mi. north of Crystal Falls.....	.....	10,000
64	2 mi. north to 10 mi. south of Lavigne.....	12	10,000
64	6 mi. north of Field.....	.....	6,000

Secondary Highways

522	At Golden Valley.....	.....	10,000
522	3 mi. west of Trout Creek to 25 mi. west.....	22	30,000
528.			
528A	Wolseley Bay to Pine Cove Road.....	9	8,000
533	4 mi. north of Mattawa to Hwy. 63.....	30	25,000
535	Noelville to Veuve River.....	31	17,000
539	Warren to River Valley.....	16	15,000
607			
607A	French River to Bigwood.....	.....	5,000
	TOTALS.....	130.4	263,719

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
11	Burks Falls to Temagami.....	119	1,314
17	Pembroke to Hagar.....	179	4,915
63	North Bay to Temiskaming.....	40	547
64	Rutter to Marten River.....	85	11,025

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
Secondary Highways			
522	Trout Creek to Loring.....	38	3,498
524	Secondary Highway 522 to Secondary Hwy. 534.....	2	160
534	Powassan to Restoule.....	23	516
535	Veuve River to Noelville.....	31	3,937
539	Warren to Field.....	26	856
510, 124	Hwy. 11 to Magnetewan.....	15	144
700	Hwy. 11 (Airport Rd.) to Airport.....	6	57
TOTALS.....		564	26,969

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11, 11B	Channelization.....	1.5	1958	.....	1.5	948
11	Nipissing Junction weigh scales.....	.3	1958	.....	.3	800
11	North Bay By-pass.....	1.5	1958	.....	1.5	600
17	Petawawa weigh scales.....	.3	1958	.....	.3	598
17	3 mi. west of Mattawa to 6 mi. west.....	3.0	1958	.....	3.0	11,054
17	Sturgeon Falls.....	.....	1958	.....	.....	101
64	Verner.....	.4	1958	.....	.4	794
TOTALS.....		7.0	.....	.....	7.0	14,895

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles in Project	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
64	Crystal Falls to 3 mi. south of Field.....	5.0	.....	5.0	10,000
64	Alban to Rutter.....	1.9	.....	1.9	4,000
Secondary Highway					
522	11 mi. east of Loring for 5 mi.....	5.0	.....	5.0	9,000
TOTALS.....		11.9	.....	11.9	23,000

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals Bit. Used 1958-59	Tons Sand Used 1958-59
64	3 mi. south of Field to 12 mi. north.....	15.0	51,946	1,579.5
Secondary Highways				
534	Powassan to Restoule.....	22.0	76,186	2,316.6
539	Field to River Valley.....	10.0	34,630	1,053.0
TOTALS.....		47.0	162,762	4,949.1

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
11	3 mi. south of Trout Creek.....	.3	400	55
64	Sturgeon Falls northerly.....	5.7	16,246	518
64	Monetville northerly.....	5.4	12,103	567
Secondary Highways				
522	Trout Creek westerly.....	2.5	6,958	328
522	Loring to 11 mi. east.....	11.0	26,183	1,186
TOTALS.....		24.9	61,890	2,654

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
11	Nipissing Junction.....	1958	1958	Concrete rigid frame
11	North C.N.R. Overhead-Callander By-pass.....	1958	Not Compl.	Structural steel girder
11	South C.N.R. Overhead-Callander By-pass.....	1958	Not Compl.	Concrete rigid frame

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
539	C.P.R.	Sudbury, Dunnett Twp., Lot 2, Con. 6.....	X

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Completed
11	Nipissing Junction.....	Scale house	1958	1958
17 T.C.	North Bay By-pass.....	Scale house	1958	1958
17 T.C.	Petawawa.....	Scale house	1958	1958
11	Patrol Tool Shed.....	Tool shed	1958	1958

Total of Other Work Done on District No. 13

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	7		
Calcium dust layer on gravel roads.....		751.2	160.3
Calcium for de-icing roads.....		60.3	District
Off-road parks maintained.....	4		
Roads snowplowed and kept open, King's Highways.....	6		446
Roads snowplowed and kept open, Secondary Highways.....	11		183
Roadside picnic places maintained.....	57		
Routine maintenance, King's Highways.....			446
Routine maintenance, Secondary Highways.....			183
Salt for de-icing roads (raw).....		5,404.4	446
Salt in sand, stockpiled.....		2,102	
Sand for winter maintenance.....		63,000	
Scale houses maintained.....	4		
Seeding by Department's Forces..... (sq. yds.)	658,240		
Signs erected or replaced.....	3,322		
Snow fence erected, dismantled, stored.....			49.8
Weed control.....			6.2
Zone painting on King's Highways..... (gals.)	4,291		313
Zone painting on Secondary Highways..... (gals.)	84		6

DISTRICT No. 14—NEW LISKEARD**R. S. CHAPMAN, P.Eng.—District Engineer****Construction**

The placing of granular base, shouldering and base course of pavement on Highway 11, Matheson northerly nine miles to Monteith, was completed this year. The top course of this pavement will be placed in 1959.

The extension of Highway 101 from 39 miles east of Matheson to the Quebec Boundary was completed and opened this year to link with the northern Quebec road system.

A short section of Highway 65 east of New Liskeard was regraded and the Sutton Creek Bridge was replaced with two structural plate arch culverts.

A section of Highway 65, 14 miles west of New Liskeard, was regraded and the Wabi River Bridge, a treated-pile, trestle-structure, was completed this year.

Maintenance

The winter of 1957–58 was comparatively mild with less than usual snowfall. The spring of 1958 was abnormally dry and lake levels were at almost an all-time low. Resultant frost damage to roads was less than usual, but was late, and continued into June. Priming and surface treatment operations were much disturbed due to cool, showery weather in May and June with resulting higher than average cost.

Mulch pavement was extended a further eight miles on Highway 101 easterly from the Johns Manville Road to Perry Lake, and on Highway 65 a further 9.6 miles westerly from New Liskeard.

For the second year 50 miles of Secondary Highways were treated with calcium chloride in solution applied under pressure. Another 90 miles were treated with flake calcium. The District was supplied with a new Zone Painting unit and 322 miles of paved highways were painted. In addition, our unit worked in Cochrane District.

The winter of 1958–59 was unusually severe. Freeze-up was apparent the third week of November and from then on the snow stayed, and there was no thawing all winter. Sub-zero temperatures were prevalent until early March 1959. Snowfall was average but persistent until early March after which there were four storms averaging eight to nine inches each. The last month caused higher than average winter maintenance expenditure.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958–59
11	Porquis Junction south for 8 mi.....	8.0	1957	....	5.2
65	6 mi. northeast New Liskeard.....	0.5	1958	....	0.5
65	Wabi River approximately 18 mi. west New Liskeard.....	0.97	1958	....	0.97
66	5.2 mi. east of Kirkland Lake for 3.25 mi.	3.25	1958	....	2.67
66	Kirkland Lake east for 5.34 mi.....	5.34	1958	....	.48
101	Quebec Border west for 8.2 mi.....	8.2	1957	2.0	6.2
TOTALS		26.26		2.0	16.02



Bridge replacement construction and approach grading over Wabi Creek, 18 miles west of New Liskeard on Highway 65.

Granular Base Laid on New Grading

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	Porquis Junction south.....	8.0	1957	....	7.5	43,678
11	Matheson north 9.3 mi.....	9.3	1958	....	9.3	217,750
65	6 mi. northeast of New Liskeard 0.5 mi.....	0.5	1958	....	0.5	7,591
65	Wabi River approximately 18 mi. west of New Liskeard.....	0.97	1958	....	0.97	27,328
66	5.2 mi. east of Kirkland Lake east 3.25 mi.....	3.25	1958	....	2.67	44,562
101	Quebec Boundary westerly 8.2 miles.....	8.2	1957	2.0	6.2	72,510
	TOTALS.....	30.22		2.0	27.14	413,419

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
11	Matheson north.....	9.3	92,348
11	Matheson to Porquis.....	20.0	20,000
65	6 mi. northeast of New Liskeard 0.5 mi.	0.5	1,695
65	Wabi River approximately 18 mi. west of New Liskeard.....	.97	10,139
65	16 mi. west to 26 mi. west of New Liskeard.....	10.0	20,000
66	5.2 mi. east of Kirkland Lake easterly.....	3.25	22,000
66	Kirkland Lake east 5.34 mi.....	5.34	9,000
101	Quebec Boundary westerly.....	8.2	74,480
101	Johns Manville Road easterly 5 mi.....	5.0	10,000
101	Perry Lake to Garrison Creek.....	9.0	14,000

Secondary Highways

571, 562	Nos. 562 and 571 various areas.....	11.0	10,000
577	No. 577 Monteith to Ansonville.....	8.2	10,000
610	Connaught to Hwy. 101.....	10.0	10,109
616	Crawford River to intersection of Secondary Hwy. 642.....	19.0	20,000
	TOTALS.....	119.76	323,771



Junction of Highway 11 and Highway 112, New Liskeard District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
101	Warren Lake easterly.....	4	2,300
101	Garrison Creek westerly.....	8	13,900
66	Hwy. 11 westerly.....	7	15,000
65	10 mi. west of New Liskeard to 21 mi. west.....	11	33,400

Secondary Highways

558	Various sections.....	6	10,500
567	Various sections.....	5	12,200
569	Various sections.....	9	4,500
564	Hwy. 11 to Boston Creek Station.....	5	2,000
562	Various sections.....	4	1,500
571	Earlton to Jct. Hwy. 62.....	3	800
566	2.0 mi. west of Matachewan to Floating Bridge.....	9	6,300
568	Hwy. 11 to Kenogami Station.....	1	200
570	Hwy. 11 to Seseikinika.....	2	800
576	Hwy. 101 to Waterhen Creek.....	1.5	400
560	Various sections Elk Lake to Houston Lake.....	21	12,900
560	Various sections Houston Lake to Westree.....	30	19,200
560	Charlton sections to Tamarac Creek.....	10	5,800
610	Connaught to Hwy. 101.....	10	3,500
616	Various sections.....	10	15,300
577	Hwy. 101 to Ansonville.....	15	16,700
TOTALS.....		171.5	177,200

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	Matheson north.....	9.3	1958	.....	9.3	15,151

Secondary Highway

577	North end Cont. 58-12 to Monteith.....	1.0	1958	.....	1.0	896
101	Various locations.....	.....	1958	.....	.....	4,978
	Timmins easterly 0.6 mi. Pamour Diversion Matheson D.H.O. Yard Patches on Hwy. 11					
66	Amikougami Bridge over Amikougami River, approximately 1 mi. northeast of Swastika.....	0.15	1958	.....	0.15	500
TOTALS.....		10.45		.....	10.45	21,525



Amikougami River Bridge on Highway 66 at Swastika was the first prestressed concrete bridge in Northern Ontario, New Liskeard District.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
65	6.2 mi. to 15.6 mi. west of New Liskeard limits.....	9.4	...	9.4	14,000
101	10 mi. to 18 mi. east of Matheson Town limits.....	8.0	...	8.0	12,000
	TOTALS.....	17.4	...	17.4	26,000

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
65	Elk Lake to intersection Secondary Hwy. 562.....	19.5	52,700	1,750
66	Hwy. 11 to Hwy. 66.....	26.0	70,200	2,340
572	Hwy. 11 to Holtvre Town Site Boundary.....	5.0	13,500	450
	TOTALS.....	50.5	136,400	4,540

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
65	Elk Lake westerly.....	12.3	39,700	1,575
101	Cripple Creek easterly.....	8.5	27,400	1,090
11	Bourkes to Wavell.....	7.5	24,200	960
		28.3	91,300	3,625

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
65	Wabi River, 18 miles west of New Liskeard.....	1958	Oct. 1958	Creosoted timber piles and cone deck beams and curbs
11	Driftwood River bridge, 13 mi. north of Matheson	1958	Aug. 1958	Trestle approaches and bailey central span.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
101	O.N.R.	109.7 miles, Lot 8, Con. 3, Whitney Township, South Cochrane District	X

Replacing obsolete wig-wag.

Totals of Other Work Done on District 14

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	11	.....	.....
Calcium dust layer on gravel roads.....	.....	500	140
Off-road parks maintained.....	23	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	442
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	357
Roadside picnic places maintained.....	27	.....	.....
Routine maintenance, King's Highways.....	.....	.....	425
Routine maintenance, Secondary Highways.....	.....	.....	357
Salt for de-icing roads (raw).....	.....	3,781	348
Salt in sand, stockpiled.....	.....	606	.....
Sand for winter maintenance.....	.....	36,964	.....
Scale houses maintained.....	2	.....	.....
Seeding by Department's Forces.....(sq. yds.)	36,300	.....	.....
Signs erected or replaced.....	1,325	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	85
Weed control.....	.....	.....	70
Zone painting on King's Highways.....(gals.)	2,848	.....	235
Zone painting on Secondary Highways.....(gals.)	1,280	.....	87



Grading at Arnett Lake on Hornpayne Road, 15 miles south of Highway 11, Cochrane District.

DISTRICT No. 16—COCHRANE**E. H. JONES, P. Eng., District Engineer****Construction**

The new bridge over the Mattagami River at Smooth Rock Falls was officially opened to traffic on September 23, 1958 by the Minister of Highways, the Honourable Fred M. Cass, Q.C.

The Department asphalt plant completed 83 miles of H.L. 4 top course thus completing the paving of Highway 11 between Hearst and Longlac. The plant also completed the Hornepayne Access Road (Secondary Highway 631) which was opened to traffic in August 1958. A permanent bridge is being constructed at the Lake Nagagamisus Narrows which will be completed during the summer of 1959. As a winter operation, the Department asphalt plant was moved from Marathon Pit to Cochrane.

Grading contractors between Kapuskasing and Lowther progressed satisfactorily through the summer and winter despite a considerable handicap through weather conditions. This also applied to the grading contract from Cochrane south 10 miles, however, all work stopped on the construction of the Wicklow River Bridge due to a landslide on the west approach.

The grading contract from two miles south of Driftwood to three miles north has not been completed according to schedule. The contract from three miles north to 10 miles east of Smooth Rock Falls has been completed. Likewise the grading contract on the Hunta Diversion has been completed and the granular base contract is progressing satisfactorily and an early completion is anticipated.



New bridge on Highway 11 over the Mattagami River at Smooth Rock Falls. Cochrane District.

Maintenance

The Hornepayne Road, No. 631, constructed by Department of Highways' forces, was taken over by the maintenance section in October 1958. Three hundred seventy-three (373) warning signs were erected over the entire 45 miles of secondary highway.

Extensive repairs were made to the Mattawishkwia River bridge at Hearst and a number of native timber bridges were replaced with creosoted timber culverts.

Sixty-five acres of the highway right-of-way were seeded and mulched with good results.

Landscaping and development of ground at the new seven-bay district office at Cochrane, and new five-bay garage at Hearst, was started late in 1958, but was not completed.

Two new three-ton trucks for patrol work on the Hornepayne Road were received, also a new eight-ton roller for asphalt work.

During the winter months work crews were organized and engaged in clearing the right-of-way of brush and trees from Hearst westerly for 30 miles.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
11	10.5 mi. west of Cochrane to 2 mi. south of Driftwood.....	7.9	1956	4.5	3.4
11	2 mi. south of Driftwood to 3 mi. north.....	4.6	1957	0.4	1.4
11	North of Driftwood to 5 mi. west.....	4.5	1957	2.5	2.0
11	East approach to west of Mattagami bridge, Smooth Rock Falls.....	0.9	1957	0.6	0.3
11	Kapuskasing to Harty.....	10.3	1958	0.2	9.1
11	Cochrane south 10 miles.....	10.0	1958	....	6.0
11	Harty to Opatatika.....	8.24	1958	....	6.2
11	Opatatika to Lower.....	9.98	1958	....	5.4
TOTALS.....		56.42		8.2	33.8

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	10.5 mi. west of Cochrane to Hunta Diversion.....	0.5	1957	0.3	0.2	6,396
11	3.0 mi. north of Driftwood to 10 mi. east of Smooth Rock Falls.....	4.5	1957	3.5	1.0	32,665
11	East approach to west approach, Mattagami Bridge, Smooth Rock Falls.....	0.9	1957	0.5	0.4	17,284
11	Hunta Diversion.....	....	....	....	7.0	171,875
11	Kapuskasing to Harty.....	10.3	1958	....	8.6	319,709
11	Harty to Opatatika.....	8.24	1958	....	6.0	314,138
11	Opatatika to Lowther.....	9.98	1958	....	1.0	36,938
TOTALS.....		34.42		4.3	24.2	899,005



Hot mix paving completed by Department forces on Highway 11, 15 miles west of Hearst, Cochrane District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
11	Kapuskasing Airport to Mattice.....	40.0	74,000
11	Hunta Diversion.....	7.9	3,500
11	3 mi. north of Driftwood to 10 mi. east of Smooth Rock Falls.....	4.45	11,000
11	Kapuskasing to Harty.....	10.3	5,700
11	Hearst to Mattice.....	19.0	15,000
11	Cochrane to Porquis Junction.....	33.0	31,300
574	Cochrane to Norembega.....	18.0	10,000
583	Lac Ste. Therese to Meade.....	31.0	20,000
11	Hearst to Mattice.....	19.0	15,000
11	10.5 mi. west of Cochrane to 25 mi. west.....	15.0	10,000
TOTALS.....		197.65	195,500

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
11	Porquis to Cochrane.....	31	2,130
11	Cochrane to Smooth Rock Falls.....	40	9,007
11	Smooth Rock Falls to Kapuskasing.....	39	393
11	Kapuskasing to Mattice.....	41	18,330
11	Mattice to Hearst.....	19	9,873
11	Hearst to Pagwachuan.....	71	2,535
11	Pagwachuan to Longlac.....	61	1,297
67	Porquis to Iroquois Falls.....	6	47
574	Cochrane to Norembega.....	18	2,220
578	Herman Lake to Montrock.....	6	135
579	Cochrane to Gardiner.....	19	3,439
583	Lac Ste. Therese to Meade.....	20	2,772
631	Jct. Hwys. 11 and 631 to Hornepayne.....	42	60
TOTALS.....		413	52,308

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
11	Hearst to Longlac..... Top course only by D.H.O. Asphalt Plant for 80 miles.	132.0	1954	131	1	96,735

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
578	Jct. of Hwy. 11 and Secondary Hwy. 578 (Herman Lake) to Montrock.....	6	18,000	1,200

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
11	Mattagami River at Smooth Rock Falls.....	1956	1958	Cantilever
11	Shekak River, 34 mi. west of Hearst.....	1956	1958	Concrete
11	Nagagami River, 43 miles west of Hearst.....	1957	1958	Concrete
11	Otasawin, 60 mi. west of Hearst.....	1956	1958	Concrete

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Completed
11	Nagagami D.H.O. Patrol Yard.....	Bunkhouse	1958	June 26, 1958
631	Hornepayne D.H.O. Patrol Yard.....	Patrol garage	1958	Feb. 1, 1959
11	Hearst D.H.O. Patrol Yard.....	Salt shed	1958	Sept. 29, 1959

Totals of Other Work Done on District No. 16

Item	Total Number	Total Tons	Total Miles
Bridges painted, hand rail only.....	5	.....	.....
Calcium dust layer on gravel roads.....	.....	898.15	153.25
Calcium for de-icing roads.....	.....	5.75	18
Roads snowplowed and kept open, King's Highways.....	.....	.....	307.82
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	113.44
Roadside picnic places maintained.....	8	.....	.....
Routine maintenance, King's Highways.....	.....	.....	307.84
Routine maintenance, Secondary Highways.....	.....	.....	113.44
Salt for de-icing roads (raw) .....	.....	1,055.8	.....
Salt in sand, stockpiled.....	.....	420.80	.....
Sand for winter maintenance.....	.....	7,519.0	.....
Scale houses maintained.....	1	.....	.....
Seeding by Department's Forces..... (sq. yds.)	101,619	.....	.....
Signs erected or replaced.....	1,997	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	19
Weed control.....	.....	.....	135
Zone painting on King's Highways..... (gals.)	945	.....	220

DISTRICT No. 17—SUDBURY**W. S. COLE, P.Eng., District Engineer****Construction**

Grading contracts completed during 1958-59 included Highway 68 from Sheguiandah to Ten Mile Point, a distance of 6.6 miles, and Highway 544, Larchwood, west 5.8 miles.

Paving was completed on Secondary Highway 544 from Murray Mine to Azilda and Larchwood west for 5.8 miles.

Maintenance

During the past year the new district office and district garage were completed at McFarlane Lake on Highway 69, south of Sudbury. These new buildings have greatly improved the efficiency of both the office and garage staff.

A tree-planting program on recently graded sections of Highways 17 and 69 was undertaken this year for the first time, and it would appear that the catch has been very good.

The mileage treated with prime dust layer was increased this year when an additional 25 miles on Manitoulin was included in our prime contract.

An extensive day labour program was carried out during the winter months. The work included granular padding on old Highway 17 from Whitefish to Nairn Centre, raising and widening the shoulders of Secondary Highway 544 from Azilda to Larchwood with granular material, and the clearing of brush from the right-of-way on 91.0 miles of King's Highways and Secondary Highways.



New bridge under construction on Highway 68 over the Spanish River at Espanola. Temporary Bailey bridge at left, Sudbury District.

The past winter was the severest one in many years. The snowfall was much greater and, as a result, snow removal equipment was used much more than usual and an increased amount of raw chemical was required to keep the roads open.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59
68	Sheguiandah to Ten Mile Point.....	6.6	1957	5.4	1.2
68	Espanola Spanish River bridge and approaches.....	0.9	1958	.....	0.45
68	Espanola south.....	5.45	1958	.....	2.6
69 T.C.	Pointe Au Baril to Magnetewan River.....	12.32	1958	.....	3.8
69 T.C.	Magnetewan River bridge and approaches	0.61	1958	.....	0.35

Secondary Highways

544	Levack easterly.....	5.6	1957	4.8	0.8
544	Vermilion River bridge and approaches...	0.50	1959	.....	0.1
545	Garson to Bailey's Corner.....	3.82	1958	.....	2.5
545	Capreol 5 mi. north.....	5.0	1958	.....	5.0
606	Veuve River bridge and approaches.....	0.33	1958	.....	0.25
	Killarney to Burwash, Project 5-514 (including 4 miles of clearing ahead).....	42.00	1955	9.0	4.0
	TOTALS.....	83.13		19.2	21.05

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
68	Sheguiandah to Ten Mile Point	6.6	1957	5.4	1.2	23,422.40
68	Espanola south.....	5.45	1958	.....	2.6	9,266.17
69 T.C.	Pointe Au Baril to Magnetewan River.....	12.32	1958	.....	3.8	773
69 T.C.	Magnetewan River and app.	0.61	1958	.....	0.35	405
544	Levack easterly.....	5.6	1957	4.8	0.8	4,149.24
606	Veuve River bridge and app.	0.33	1958	.....	0.25	15,842
	TOTALS.....	30.91		10.2	9.0	53,857.81

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
Old 17	Whitefish to Nairn (Scattered Sections).....	4.0	1959	.....	4.0	37,130.0
	New D.H.O. building yard, 5 mi. south of Sudbury on Hwy. 69.....	.....	1958	.....	.....	60,041.73

Secondary Highways

543	Hwy. 69 to Long Lake.....	5.0	1958	.....	5.0	59,453.81
544	Azilda to 10 mi. westerly (Raise and widen shoulders).....	10.0	1959	.....	10.0	38,770.00
	TOTALS.....	19.0		.....	19.0	195,395.54

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
68	Espanola to Lewis Lake	30	15,010.86
68	Espanola south	2.6	135.93
68	Lewis Lake to Little Current	10	14,996.68
69	Sudbury to Capreol	18.5	10,000
69	Magnetawan River south	12.5	24,999.99
69 T.C.	Burwash to French River	25	9,992.48

Secondary Highways

537	Wanapitei to Wanup	12.0	10,000
540	2 mi. west of Kagawong	3.35	9,995.57
540	Gore Bay to Meldrum Bay	45	19,997.03
542	Tehkummah to Mindemoya	16	14,996.01
543	Hwy. 69 to Long Lake	5.0	25,031.67
544	Levack easterly	0.8	113.68
544	Murray-Azilda and Larchwood-Levack	14.6	40,714.15
544	Levack to Cartier	18	9,987.52
544	Sudbury to Levack	31.5	9,996.60
545	Garson to Bailey's Corner	2.5	15,500.00
606	Veuve River bridge and approaches	0.25	1,182
TOTALS		247.6	232,650.17

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
68	Hwy. 17 to South Baymouth	32.9	12,000
69 T.C.	Secondary Hwy. 529 to Magnetawan River	12.5	3,500

Secondary Highways

537	Wanup to Wanapitei	11.3	4,000
540	Gore Bay to Meldrum Bay	45.7	23,500
542	Tehkummah to Gore Bay	44.4	22,000
544	Levack to Cartier	24.0	3,000
549	Hwy. 17 to Penage	9.1	1,800
551	West Bay to Providence Bay	11.6	5,300
606	Hwy. 17 to Markstay	1.0	500
TOTALS		192.5	75,600

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	Patch at Beaver Lake, Lorne Twp	0.1	1958	.....	0.1	.....
544	Murray Mine to Azilda and Larchwood to Levack	14.6	1958	.....	14.6	33,352.62
TOTALS		14.7	.....	.....	14.7	33,352.62

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
68	Sheguiandah to Ten Mile Point	6.6	.....	6.6	11,500
543	Highway 69 to Long Lake	5.0	.....	5.0	8,800
544	Cartier Rd. intersection westerly	1.0	.....	1.0	1,600
TOTALS		12.6	.....	12.6	21,900



Grading on Highway 69 Trans-Canada at Moose Lake between Pointe au Baril and Magnetawan River, Sudbury District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
68	Ten Mile Point to South Baymouth	33	.....	.....
69	Magnetawan River to Hwy. 529	12.2	.....	.....
526	Hwy. 69 to Britt	2.3	.....	.....
542	Hwy. 68 to Gore Bay	45.0	.....	.....
549	Hwy. 17 to Penage Lake	9.0	.....	.....
551	West Bay to Mindemoya and Hwy. 542 to Providence Bay	11.0	.....	.....
	Above projects under Cont. 58-308			
	SUB-TOTAL	112.5	315,243	5,288
544	Murray to Azilda and Larchwood to Levack, Cont. 58-59	14.6	53,802	1,261
	TOTALS	127.1	369,045	6,549

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
540	1.5 mi. east of Kagawong westerly 14 mi.	14.45	43,500	1,800

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type
537	St. Cloud, over Wanapitei River	1958	1958	Bailey*
549	Little Penage Lake, Lot 5, Con. 1, Louise Twp. (Trout Lake)	1958	1958	Timber†

* D.S. Bailey placed by D.H.O. forces over old cracked timber truss bridge.

† By D.H.O. forces, 150' of timber spans removed and replaced by causeway leaving one 27-foot timber span as equalizer.



Completed grading and paving with arch culvert on Highway 68 at Sheguiandah Creek, Sudbury District.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type Flash. Lights Bell
536	C.P.R.	Sudbury District, Waters Twp., Lots 6 and 7, Con. 4.....	X

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Completed
69 T.C. McFarlane Lake, standard 9-bay.....		District office		
69 T.C. McFarlane Lake, standard 14-bay.....		District garage		
69 T.C. McFarlane Lake, standard 9-bay.....		Heated storage		
69 T.C. McFarlane Lake, standard 9-bay.....		Cold storage		
69 T.C. Britt, standard 200 tons.....		Salt storage	1958	1958

Totals of Other Work Done on District 17

Item	Total Number	Total Tons	Total Miles
Bridges painted	5		
Calcium dust layer on gravel roads.....		950	279.0
Off-road parks maintained.....	7		
Roads snowplowed and kept open, King's Highways.....			276
Roads snowplowed and kept open, Secondary Highways.....			284
Roadside picnic places maintained.....	13		
Routine maintenance, King's Highways.....			276
Routine maintenance, Secondary Highways.....			284
Salt for de-icing roads (raw).....		5,576	
Salt in sand, stockpiled.....		750	
Sand for winter maintenance.....		11,000	
Scale houses maintained.....	1		
Seeding by Department's Forces..... (sq. yds.)	4,840		
Shrubs received and planted this year.....	300		
Signs erected or replaced.....	4,711		
Snow fence erected, dismantled, stored.....			73.5
Weed control.....			299
Zone painting on King's Highways..... (gals.)	3,084		174.4
Zone painting on Secondary Highways..... (gals.)	1,754		103.2

DISTRICT No. 18—SAULT STE. MARIE**D. P. COLLINS, P.Eng., District Engineer****Construction**

Grading, granular base and paving completed on 4.1 miles of improvement roads connecting Highway 108 with Milliken, Stanleigh, Algom-Nordic and Lacnor Uranium Mines.

Grading, granular base and paving was completed for a length of 14.8 miles on Highway 17 T.C.H. Iron Bridge to Thessalon.

Grading and granular base completed for a length of 3.5 miles on the Thessalon By-pass of Highway 17 T.C.H.

Grading, granular base started on 15.3 miles of improvement roads connecting Highway 108 with CanMet, Stanrock, Panel and Consolidated Dennison mine roads.

Grading and granular base was 90 per cent completed of the 9.4-mile extension of Highway 129 westerly.

Grading and granular base started on 15 miles of Highway 17 T.C.H. north of Sault Ste. Marie. No unusual conditions were encountered during this construction season.

The aux Sables River bridge, the C.P.R. Overhead at Thessalon, the Thessalon, Montreal River and Blind River bridges all on Highway 17 T.C.H. were completed and opened to traffic. The Sideburned Lake bridge on Highway 129, 12 miles southwest of Chapleau, and the Goulais River structure on Highway 17 north, T.C.H. 16 miles north of Sault Ste. Marie were started.

Maintenance

A new hydro-seeder and a new straw mulch blower were obtained this year and were used successfully on Highway 108 and between Thessalon and Iron Bridge on Highway 17. A four-wheel-drive loader has proved very useful on a variety of work.

The workshop obtained a new steam jenny. Underground gasoline tanks, and electric pumps were installed at Chapleau.

A portable mixing plant on loan from Fort William District was used on Highway 17 north of Sault Ste. Marie, where a considerable amount of patching was completed. Mulch stockpiled in the fall of 1957 was laid very successfully on Highway 129.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59
17 T.C.	Iron Bridge to Thessalon station.....	14.8	1957	.....	14.8
17 T.C.	aux Sables River bridge .....	.6	1957	.....	.3
17 T.C.	Montreal River bridge.....	.6	1957	.....	.6
17 T.C.	Heyden to Goulais River.....	6.72	1958	.....	.....
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	.....	.....
129	7 mi. South Chapleau westerly.....	9.38	1956	.....	9.38
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	.....	.....
TOTALS		47.82	.....	.....	25.08



Grading on Highway 129 seven miles south of Chapleau, Sault Ste. Marie District.

Granular Base Laid on New Grading

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Compl. 1958-59
129	7 mi. South Chapleau on Chapleau Road.....	9.38	1956	.....	6	54,096
17 T.C.	Thessalon By-pass.....	3.5	1957	.....	3.5	53,676
TOTALS.....		12.88		.....	9.5	107,772

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	aux Sables River, Massey	0.6	1957	.....	.6	3,074
17 T.C.	Iron Bridge to Thessalon station.....	14.8	1957	.....	14.8	364,735
17 T.C.	Blind River bridge.....	0.2	1958	.....	.....	2,327
17	Algoma Mills to Webbwood.....	15.0	1958	.....	15.0	41,324
TOTALS.....		30.6		.....	30.4	411,460

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
129	7 mi. South Chapleau on Chapleau Road.....	9.38	19,405
17 T.C.	aux Sables River bridge, Massey	0.6	132
17 T.C.	Iron Bridge to Thessalon station.....	14.8	172,266
17 T.C.	Montreal River bridge.....	.6	3,458
17 T.C.	Algoma Mills to Webbwood.....	15.0	16,359
17 T.C.	Thessalon By-pass.....	3.5	6,149
17	Spragge to Webbwood.....	.....	.....
129	Mi. 33 to mi. 43 south of Chapleau.....	10.0	7,014
129	Mi. 41 to mi. 61 south of Chapleau.....	20.0	12,068
554	Jct. 554 and 556 to Jct. 554 and Hwy. 129.....	11.0	6,431
TOTALS.....		84.88	243,282



Grading at Thessalon By-pass section of Highway 17 Trans-Canada, Sault Ste. Marie District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
17	Webbwood to Agawa River.....	233.0	12,000
129	Thessalon to Chapleau.....	145.0	6,000
108	Hwy. 17 to Quirke Lake.....	26.0	2,500

Secondary Highways

546	White River Road.....	50.0	1,500
548	St. Joseph Island Road.....	46.0	5,500
555	Granary Lake Road.....	7.1	1,100
561	Dunns Valley.....	19.2	500
553	Massey Tote Road.....	50.0	3,000
554	Parkinson Road.....	11.0	300
556	Searchmont Road.....	23.0	4,000

TOTALS.....	610.3	36,400
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Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	Iron Bridge to Thessalon sta- tion.....	14.5	1957	.....	14.5	39,325
17 T.C.	aux Sables River bridge at Massey.....	0.6	1957	.....	0.6	1,345
	TOTALS.....	15.1		.....	15.1	40,670

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles in Project	Compl. Previous Years	Tons Placed 1958-59
129	95.6 to 101.2 mi. north of Thessalon.....	5.6	.....	8,400
129	101.2 mi. to 104 mi. north of Thessalon.....	2.8	.....	4,200
17	Webbwood to Agawa River.....	.....	.....	6,368*
129	Thessalon to 31 mi. north of Thessalon.....	.....	.....	700*
550	Gros Cap Road.....	.....	.....	70*
565	Point Aux Pins Road.....	.....	.....	105*
548	St. Joseph Island ferry road.....	.....	.....	7*
108	Quirke Lake Road.....	.....	.....	50*
	TOTALS.....	8.4	.....	19,900

* Pavement patching.



Completed granular base and paving on Highway 17 Trans-Canada five miles west of Iron Bridge, Sault Ste. Marie District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59
129	Chapleau Road, mi. 95 to 105.....	10	29,000
552	White Birches Road.....	5	14,500
553	Massey Tote Road.....	6	17,400
563	Batchewana Village Road.....	3	8,809
TOTALS.....		24	69,709

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1958-59	Tons Placed 1958-59
17	Algoma Mills to Webbwood.....	15	37,571

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons 5/8 Used 1958-59
129	Chapleau Road, mi. 82 to 95 north of Thessalon.....	13	39,160	1,300
552	White Birches Road.....	5	16,060	500
563	Batchewana Village Road.....	3	15,234	300
TOTALS.....		21	70,454	2,100

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type of Bridge or Structure
17 T.C.	aux Sables River, Massey	1957	Nov./58	Reinforced concrete
17 T.C.	Blind River.....	1958	Nov. 20/58	Steel girders, concrete piers and deck
17 T.C.	C.P.R. overhead, Thessalon.....	1957	Aug./58	Reinforced concrete
17 T.C.	Thessalon River at Thessalon.....	1957	Aug./58	Steel girders, concrete piers and deck
17 T.C.	Montreal River.....	1957	July/58	Steel girders on abutments

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Compl.
17	Massey, D.H.O. Yard.....	Salt shed	1958	1958
17	Spanish, D.H.O. Yard.....	Salt shed	1958	1958
561	Bruce Mines, D.H.O. Yard.....	Salt shed	1958	1958

Totals of Other Work Done on District No. 18

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	2	.....	.....
Calcium dust layer on gravel roads.....	.....	560	314
Calcium for de-icing roads.....	.....	.....	405
Roads snowplowed and kept open, King's Highways.....	.....	.....	201
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	.....
Roadside picnic places maintained.....	25	.....	.....
Routine maintenance, King's Highways.....	.....	.....	405
Routine maintenance, Secondary Highways.....	.....	.....	247
Salt for de-icing roads (raw).....	.....	3,410	168
Salt in sand, stockpiled.....	.....	600	.....
Sand for winter maintenance.....	.....	12,000	.....
Scale houses maintained.....	2	.....	.....
Seeding by department's forces.....(sq. yds.)	634,000	.....	.....
Signs erected or replaced.....	850	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	21
Traffic lights installed this year.....	1	.....	.....
Zone painting on King's Highways.....(gals.)	.....	.....	404
Zone painting on Secondary Highways.....(gals.)	.....	.....	21



Bridge construction at Sideburn Lake, Highway 129, 12 miles southwest of Chapleau, Sault Ste. Marie District.

DISTRICT No. 19—FORT WILLIAM**J. B. GARLAND, P.Eng., District Engineer****Construction**

The paving of Highway 120 from Highway 17 to Atikokan was completed and clearing was done by day labour forces on the first 10-mile section of the extension of this highway towards Fort Frances.

On the Trans-Canada Highway west of Fort William the structure crossing the Kaministiquia River at Kakabeka was completed, paved and opened to traffic; the paving south from Sistonen's Corners was completed and considerable progress made on the rock excavation of a new grading contract from 7.5 miles west of Shabagua to Raith.

To the east of Fort William on the Trans-Canada Highway good progress was made on two grading contracts from Ouimet to Hurkett; piling was driven and footings poured for a new structure at Coldwater Creek; abutments constructed and the beams poured and placed for a prestressed concrete structure over the Wolfe River. Grading was completed from Nipigon to Red Rock. From Cavers easterly excellent progress was made on a major grading contract which, when completed, will reduce the present long, steep grades. Several of the rock cuts required are 60 feet deep and the fills 80 feet high.

Structures over the North Trout and Stillwater Creeks and the Black Sturgeon, Steel, Prairie, Little Pic and Black Rivers were completed and opened to traffic. The grading of the approaches to the Big Pic River bridge was finished and the piling and piers and abutments for the structure were well under way. Due to the poor soil conditions, it was necessary to flatten the cut slopes to 4:1 instead of the usual 2:1 and to redesign the piling and footings for the piers and abutments to the structures. Paving from Marathon easterly for 16 miles was completed except for five miles of top course. From Nipigon



Little Pic River bridge on Highway 17 Trans-Canada as completed in 1958, Fort William District.



Highway 17 Trans-Canada five miles south of Nipigon, Fort William District.

easterly 23 miles and from Schreiber westerly three miles, the right-of-way for future construction was cleared by day labour forces; while from Raith westerly another six miles were cleared.

Maintenance

Twenty-seven miles of seal coat were done with gratifying results. The method used entailed a first coat using sand and then a second coat using $\frac{3}{8}$ -inch chips. A total of 115,000 tons $\frac{5}{8}$ -inch crushed gravel were produced by the district crusher — 63,000 at Kenora and 52,000 at Fort William.

A large winter employment program was carried on by the District. Over \$200,000.00 was spent and up to 300 men were employed on this project. Four new picnic areas and three new look-out sites were prepared under the winter work program. Also 50 rustic tables and 25 out-houses were constructed by the District for picnic areas.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59
17 T.C.	Cavers Hill to Pays Platt.....	8.0	1958	....	3.8
17 T.C.	7.5 mi. north Jct. Hwy. 120 to Raith.....	10.1	1958	....	4.5
17 T.C.	Coldwater Creek to 10 mi. south of Red Rock.....	5.7	1958	....	4.6
17 T.C.	Ouimet to Coldwater.....	5.25	1958	....	1.4
17 T.C.	C.P.R. overhead at Rosspoint, also west end div. to Pays Platt.....	7.6	1958	....	0.6
17 T.C.	Big Pic River structure and approaches....	0.76	1957	0.6	0.16
130	Port Arthur to Jct. Hwy. 590.....	6.7	1957	....	2.0
584	Geraldton to Nakina.....	43.0	1954	....	....
580	Leitch Mine to Lake Nipigon.....	3.5	1958	3.5	3.5
625	Hwy. 11 to Caramat.....	20.0	1955	....	....
614	Hwy. 17, 15 mi. north.....	12.0	1958	....	....
	17 T.C. Red Corners to Nipigon.....	6.72	1957	1.5	5.22
TOTALS.....		129.33		5.6	25.78



Highway 17 Trans-Canada just south of Highway 17A, Fort William District.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	Kakabeka crossing of the Kaministiquia River and the Hydro aqueducts.....	1.0	1956	.8	.2	8,932
17 T.C.	Black Sturgeon River bridge.....	.....	1957	.....	.....	15,225
17 T.C.	North Trout Creek structure and approaches.....	.....	1957	.....	.....	1,129
17 T.C.	Stillwater Creek structure and approaches.....	.....	1957	.....	.....	643
17 T.C.	7.5 mi. north Jct. Hwy. 120 to Raith.....	10.1	1958	.....	1.1	33,800
17 T.C.	Coldwater Creek to 10 mi. south of Red Rock.....	5.7	1958	.....	3.8	307,000
17 T.C.	Ouimet to Coldwater.....	5.25	1958	.....	0.3	9,218
17 T.C.	C.P.R. overhead at Rossport, west end Selim div. to Pays Plat.....	7.6	1958	.....	1.5	30,000
17 T.C.	Red Rock Corners to Nipigon.....	6.72	1957	.....	6.72	61,252
TOTALS.....		36.37		0.8	13.62	467,199

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17A	Various locations for 3.5 mi.....	3.5	1958	.....	3.5	8,000
11	MacDiarmid to 5 mi. west.....	5.0	1958	.....	5.0	84,350
588	Nolalu to Hymers Corner.....	6.0	1958	.....	6.0	26,550
TOTALS.....		14.5		.....	14.5	118,900

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
17 T.C.	Big Pic River bridge approaches.....	0.76	4,102
17 T.C.	Marathon Road easterly to Rouse Lake; Little Pic structure and approaches; Heron Bay Access Road.....	22.5	22,938
17 T.C.	Coldwater Creek to 10 mi. south of Red Rock.....	5.7	16,795
17 T.C.	Stillwater Creek.....	.....	643
17 T.C.	North Trout Creek.....	0.17	766
17 T.C.	Little Pic River.....	.....	2,354
17 T.C.	Red Rock Corners to Nipigon.....	6.72	68,154
17 T.C.	Kakabeka crossing of Kaministiquia River and Hydro aqueducts.....	1.0	13,719
17 T.C.	Black River bridge.....	.....	949
17 T.C.	Sistonen's Corner, south 5.1 mi.....	5.1	25,976
17 T.C.	Sistonen's Corner (structure).....	.....	1,240
17 T.C.	Shabaqua Corner, north 7.59 mi.....	7.59	10,574
120	Shabaqua, west 14.7 mi.....	14.7	16,212
120	From 45 mi. east of Atikokan to Kashabowie River.....	15.25	93,655
120	Kashabowie River easterly 11.69 mi.....	11.69	111,089
	Stock piled.....	.....	45,350
TOTALS.....		91.18	434,516

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59
130	Port Arthur city limits to 5 mi. west.....	5.0	7,500
11	Vicinity of MacDiarmid.....	5.0	9,150
622	North limits Atikokan to 5.0 mi. north.....	5.0	2,000
590	Jct. Hwy. 588 to 7.0 mi. north.....	7.0	7,000
TOTALS.....		22.0	25,650

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	Marathon Road easterly to Rouse Lake.....	16.9	1958	—	20.25	35,663
17 T.C.	Little Pic River structure and approaches.....	0.5				
627	Heron Bay access road.....	5.1				
17 T.C.	Kakabeka Village to Sec. Hwy. 590 west.....	1.6	1958	.....	1.6	4,799
120	Kashabowie Road easterly.....	11.69	1958	.....	11.69	23,514
120	45 mi. east Atikokan to Kashabowie River.....	15.25	1957	2.0	13.25	28,045
TOTALS.....		51.04		2.0	46.79	92,021

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
61	8 mi. south Fort William to 8.5 mi. south.....	0.5	.....	0.5	750
590	Village of Murillo.....	0.4	.....	0.4	600
622	North limits Atikokan to 5.0 mi. north.....	5.0	.....	5.0	7,500
586	Hwy. 120 to 1.3 mi. south.....	1.3	.....	1.3	2,100
TOTALS.....		7.2	.....	7.2	10,950

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
17 T.C.	7.5 mi. west Jct. Hwys. 120 and 17 to 27.5 mi. west.....	20.0	29,360	2,070
17 T.C.	Terrace Bay to Jackfish.....	12.0	25,080	1,350
17 T.C.	Schreiber to Nipigon (sections).....	30.0	62,700	3,375
17 T.C.	Ouimet to Hurkett.....	13.0	27,170	1,463
17A	Dawson Road.....	16.0	23,488	1,656
130	Hwy. 130 to Port Arthur limits (3 times).....	7.0	39,536	2,299
586	Shelter Bay Road.....	3.0	6,270	338
589	Dog Lake Road.....	20.0	29,360	2,070
590	Hwy. 17 to 6.0 mi. west.....	6.0	8,808	621
590	Hwy. 17 to Hwy. 130.....	11.0	16,148	1,138
591	Trout Lake Road.....	5.0	7,340	517
595	Hwy. 590 to Hwy. 588.....	8.0	11,744	828
622	Caland Ore Road.....	5.0	10,450	563
	Terrace Hydro Road.....	1.0	2,090	113
TOTALS.....		157.0	299,544	18,401

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
11	Beardmore to 5 mi. east of Jellicoe.....	27	135,000	3,645
11	5 mi. east of Jellicoe (sand seal only).....	7	18,700	1,050
TOTALS.....		34	153,700	4,695

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
17 T.C.	Black River, 4 mi. northeast of Heron Bay.....	1957	1958	Str. steel and reinforced concrete
17 T.C.	Little Pic, west of Marathon.....	1956	1958	Str. steel and reinforced concrete
17 T.C.	Steel River, west of Marathon.....	1955	1958	Str. steel and reinforced concrete
17 T.C.	Prairie River, west of Marathon.....	1955	1958	Str. steel and reinforced concrete
17 T.C.	Stillwater Creek, 3.5 mi. west of Nipigon.....	1957	1958	Reinforced concrete
17 T.C.	North Trout Creek, 7 mi. west of Nipigon.....	1957	1958	Reinforced concrete
17 T.C.	Black Sturgeon River.....	1957	1958	Str. steel and reinforced concrete
17 T.C.	Kakabeka Falls.....	1956	1958	Reinforced concrete
589	Paul Lake Creek No. 2.....	1958	1958	Creosoted crib
589	Paul Lake Creek No. 1.....	1958	1958	Creosoted crib
582	Hurkett Loop.....	1958	1958	Creosoted crib
582	Hurkett Loop.....	1958	1958	Creosoted crib

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type of Protection
17 T.C.	C.P.R.	Thunder Bay District, Paipoonge Twp., mileage 7.28 Kaminist. Sub. Div.....	2 lights, 1 bell, 2 gates

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Completed
17E T.C.	1.5 mi. west of Pearl River, Building No. 19-166 (B-24) moved from Black Sturgeon (vic. of Red Rock) Lyon Twp. Dec. 1958.....	Field engineering bunkhouse	1958	June 2, 1958
17E T.C.	2 mi. east of Rosspport, Ont. Building No. 19-167 (B-25).....	Field engineering bunkhouse	1958	May 30, 1958
17E T.C.	2 mi. east of Rosspport, Ont. Building No. 19-168 (K-9) combination kitchen and diner.....	Field engineering kitchen	1958	July 7, 1958
17E T.C.	2 mi. east of Rosspport, Ont. Building No. 19-169 (W-8).....	Washroom	1958	June 23, 1958
17E T.C.	2 mi. east of Rosspport, Ont. Building No. 19-170 (B-26).....	Bunkhouse	1958	Aug. 3, 1958
17E T.C.	2 mi. east of Rosspport, Ont. Building No. 19-171 (O-23).....	Field office	1958	July 15, 1958
17E	Marathon, Ont. Twp. of Pic. Building No. 19-173.....	Patrol garage	1957	Oct. 1958
17W T.C.	Upsala, Ont. Purchased in 1956 from W. Stadey. Building No. 19-174 (south part of Lot 5, Con. 3).....	Patrolman's residence	.....	.....
599	Pickle Crow, Savant Lake Road. Building No. 19-175 (2 bay garage).....	Patrol garage	1958	Oct. 1958
17E T.C.	White River, Ont. Purchased from Mackey Const. Ltd. Aug. 19/58. Building No. 19-176 (Lot C.K. 77 Farm Loc. Hunt Twp.).....	Garage	.....	.....
17E T.C.	White River, Ont. Purchased from Mackey Const. Ltd. Aug. 19/58. Building No. 19-177 (Lot C.K. 77 Farm Loc. Hunt Twp.).....	Patrolman's residence when req'd	.....	.....
17E	White River, Ont. Purchased from Mackey Const. Ltd. Aug. 19/58. Building No. 19-178 (Lot C.K. 77 Farm Loc. Hunt Twp.).....	Patrolman's residence when req'd	.....	.....
11	Geraldton Garage.....	Patrol garage	1957	Mar. 1959

Totals of Other Work Done on District No. 19

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	635	181
Roads snowplowed and kept open, King's Highways.....	.....	.....	632.20
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	447.00
Roadside picnic places maintained.....	20	.....	.....
Routine maintenance, King's Highways.....	.....	.....	632.20
Routine maintenance, Secondary Highways.....	.....	.....	447.0
Salt for de-icing roads (raw).....	.....	2,497	370
Salt in sand, stockpiled.....	.....	929	.....
Sand for winter maintenance.....	.....	20,685	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces..... (sq. yds.)	1,224,520	.....	.....
Shrubs received and planted this year.....	111	.....	.....
Signs erected or replaced.....	4,150	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	31
Weed control.....	.....	.....	682
Zone painting on King's Highways..... (gals.)	6,616	.....	551
Zone painting on Secondary Highways..... (gals.)	314	.....	48

DISTRICT No. 20—KENORA**F. B. WHITELEY, P.Eng., District Engineer****Construction**

Three bridges on Highway 105, the Chukuni River, Trout Lake River and Bug River bridges, and the Eagle River bridge on the Trans-Canada Highway were opened to traffic this year.

Work continued on Trans-Canada Highway 17 under seven grading contracts and one paving contract. On one very wet cut containing fine sand and wet clay, it was necessary to subexcavate the full width of the cut four to five feet deep to overcome the capillary action of the subsoil up through the granular backfill. Also the seepage was so bad through the slopes that a foot of gravel was spread on the slopes to stop the erosion. The results were quite favourable in comparing this cut to an adjacent cut of the same conditions which did not receive this special treatment.

Work was carried out on three grading contracts on the Rainy Lake Causeway. Briefly, the work consists of dumping rock into water up to 50 feet deep and displacing the underlying mud to obtain complete displacement. In deep water, results were favourable. In shallow water, displacement of underlying mud was not immediate as the rock embankment kept dropping, sliding or shifting causing mudwaves to protrude out of the water ahead and to the sides of the fill.

On one contract of the Causeway work was carried out during winter. Dynamite was employed in a toe-shooting method to liquify the mud and also to break the ice ahead of the fill. The water depth was less than 10 feet. However, when the ice to the sides of the fill melted, it appears this released pressure on the mud, causing the rock fill to drop and mud waves to develop to the sides.

Maintenance

Priming of Highway 105 from Perrault Falls to Red Lake was completed by Department forces with very favourable results. Granular base and crushed gravel were placed on other sections of this highway.

Standard salt sheds were constructed at Sioux Lookout and Kenora and will



Trans-Canada Highway 17 at the Manitoba boundary, Kenora District.



Grading on Highway 17 Trans-Canada 15 miles west of Ignace, Kenora District.

be used for bulk salt storage during the winter and bag calcium chloride storage during the summer months.

Extensive clearing and brushing operations on new contracts and along existing highways was completed during the winter months.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59
17 T.C.	6.1 mi. east to 12.2 mi. east of Manitoba boundary.....	6.1	1958	....	5.0
17 T.C.	5 mi. east Hwy. 105 to 5 mi. west Hwy. 105.....	10.0	1958	....	10.0
17 T.C.	7.8 mi. east Borup's Corners to 8.5 mi. easterly.....	8.5	1957	3.0	5.5
17 T.C.	1.3 mi. east Borup's Corners to 6.5 mi. easterly.....	6.5	1958	....	6.5
17 T.C.	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	9.93	1958	....	3.0
120	Rainy Lake Causeway, east approaches....	0.88	1958	....	0.88
120	Rainy Lake Causeway, east approaches....	0.93	1958	....	0.40
TOTALS.....		42.84		3.0	31.28

Granular Base Laid on New Grading

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	6.1 mi. east to 12.2 mi. east of Manitoba boundary.....	6.1	1958	.....	1.5	14,750
17 T.C.	5 mi. east Hwy. 105 to 5 mi. west Hwy. 105.....	10.0	1958	.....	10.0	88,890
17 T.C.	7.8 mi. east Borup's Corners easterly for 8.5 mi.....	8.5	1958	.....	8.5	77,900
17 T.C.	Approx. 1.3 mi. east Borup's Corners, easterly 6.5 mi.....	6.5	1958	.....	6.5	73,080
17 T.C.	2.5 mi. west Raleigh to 1.5 mi. east of Butler.....	9.93	1958	.....	2.0	20,900
TOTALS.....		41.03		.....	28.5	275,520



Grading on easterly approaches to Rainy Lake Causeway east of Fort Frances, Kenora District.

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17	Raleigh Falls to Ignace.....	14	1958	.....	14	194
17	Longbow Corners to Vermilion Bay.....	62	1958	.....	62	7,500
70	Longbow Corners to Finland...	85	1958	.....	85	4,164
71	Emo to Stratton.....	5	1958	.....	5	30
72	Patricia Corners south 10 mi....	10	1958	.....	8	49,113
105	Vermilion Bay to 20 mi. north..	20	1958	.....	20	2,930
105	Perrault Falls south 15 mi.....	15	1958	.....	10	16,656
105	Ear Falls to Red Lake.....	46	1958	.....	46	1,904
119	Dryden to Richan.....	13	1958	.....	13	15,526
125	Jct. 105 to Cochenour Dock.....	8	1958	.....	8	1,812
128	Kenora to Redditt.....	18	1958	.....	18	976
594	South Aubrey Road.....	22	1958	.....	22	855
596	Laclu to Pellatt Loop.....	18	1958	.....	18	2,080
600	Harris Hill to Blackhawk.....	44	1958	.....	44	2,876
601	Dryden to Rice Lake Loop.....	16	1958	.....	16	1,027
602	Emo to Fort Frances.....	30	1958	.....	30	6,475
604	Coker to East Mellick Road...	15	1958	.....	15	565
605	Eton to Rugby Road.....	8	1958	.....	8	5,700
609	Jct. 105 to Quibell Clay Lake Road.....	10	1958	.....	10	175
611	Crozier Road, north and south..	13	1958	.....	13	3,422
613	Devlin Road.....	25	1958	.....	25	4,827
615	Blackhawk to Clearwater Lake..	16	1958	.....	16	8,848
617	Stratton to North Branch.....	14	1958	.....	14	3,068
618	Madson to Red Lake Road.....	7	1958	.....	7	270
619	Pinewood to Minahico.....	25	1958	.....	25	5,935
621	Sleeman to Morson Road.....	33	1958	.....	33	576
621	Bergland north 4 mi. in sections.....	4	1958	.....	4	17,076
623	Rainy River to Harris Hill.....	13	1958	.....	13	5,872
71	Fort Frances to Devlin.....	11.4	1958	.....	11.4	204,627
71	Pinewood to Rainy River.....	10.1	1958	.....	10.1	246,753
TOTALS.....		630.5		.....	623.5	621,832



Former Eagle River bridge replaced by new structure on Highway 17 Trans-Canada, Kenora District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
17 T.C.	Manitoba boundary to 6.1 mi. east.....	6.1	10,969.00
17 T.C.	5 mi. east Hwy. 105 to 5 mi. west Hwy. 105.....	10.0	4,055.00
17 T.C.	1.3 mi. east of Borup's Corners, easterly 65 mi.....	6.5	6,200.00
17 T.C.	7.8 mi. east of Borup's Corners, easterly 8.5 mi.....	8.5	16,890.00
71	Fort Frances to Devlin.....	11.4	18,843.00
71, 613	Sec. Hwy. 613 and Hwy. 71 stockpiled.....	14.0	14,974.62
600, 615	North Branch easterly stockpiled.....	18.0	14,972.89
TOTALS.....		74.5	86,904.51

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1958-59	Total Tons Placed 1958-59
17	Kenora to Borup's Corners.....	121.0	10,252
17	6.1 mi. east of Manitoba boundary easterly, spring break-up.....	6.1	2,150
70	Longbow Corners to 2 mi. north of Finland.....	82.0	490
71	Stratton to Sleeman.....	14.0	258
72	Dinorwic to Patricia Corners.....	38.0	21,388
105	Vermilion Bay to Red Lake.....	112.0	16,839
116	Patricia Corners to Hudson.....	10.0	1,086
119	Dryden to Richan.....	13.0	1,554
125	Jct. 105 to Cochenour Dock.....	8.0	2,600
128	Kenora to Redditt.....	18.0	2,202
594	South Aubrey Road.....	22.0	564
596	Laclu to Pellatt Loop.....	18.0	105
598	Rabbitt Lake Road.....	2.8	60
600	Harris Hill to Blackhawk.....	44.0	825
601	Dryden to Rice Lake Loop.....	16.0	1,479
602	Emo to Fort Frances.....	30.0	345
609	Jct. 105 Clay Lake, Quibell Road.....	10.0	450
613	Devlin Road.....	25.0	2,779
615	Clearwater Lake Road.....	16.0	78
617	Stratton to North Branch Road.....	14.0	758
618	Madsen to Red Lake Road.....	7.0	1,739
619	Pinewood to Minahico Road.....	25.0	2,336
621	Sleeman to Morson Road (Project 8-31283).....	33.0	4,547
TOTALS.....		684.9	74,884



New Eagle bridge on Highway 17 Trans-Canada, Kenora District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17 T.C.	Manitoba boundary, 6.1 mi. easterly.....	6.1	1958	.....	6.1	14,137.71
71	Barwick to Manders, Pinewood to Rainy River.....	15.1	1958	.....	5.0	23,312.00
71	Fort Frances to Devlin.....	11.1	1958	.....	11.1	27,199.60
TOTALS.....		32.3		.....	22.2	64,649.31

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
17 T.C.	Manitoba boundary 6.1 mi. easterly.....	6.1	30,673	622.50
17 T.C.	5 mi. east Hwy. 105 to 5 mi. west Hwy. 105.....	4.3	13,185	339.00
17 T.C.	7.8 mi. east Borup's Corners for 8.5 mi. easterly.....	8.5	45,500	1,350.00
71	Fort Frances to Devlin.....	11.4	41,506	1,510.00
105	Jct. 105 and 125 to Bug River bridge.....	6.3	24,900	690.00
105	Perrault Falls to Chukuni River bridge.....	48.9	194,400	4,812.00
125	Chukuni River bridge to Cochenour Dock.....	6.5	23,200	727.00
621	Sleeman, north 13 mi.....	13	39,385	1,518.00
TOTALS.....		105.0	412,749	11,568.50

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Chips Used 1958-59
105	Red Lake to Jct. 105 and 125.....	2.2	2,750 (R.C. 3)	82 ($\frac{5}{8}$ " Cr. Gravel)
125	Jct. 105 and 125 to Chukuni River.....	2.2	2,750 (R.C. 3)	80 ($\frac{5}{8}$ " Cr. Gravel)
592	Fort Frances to Rainy Lake.....	1.3	3,600 (R.S. 2)	168 (Sand)
TOTALS.....		5.7	9,100	330

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
17	T.C. Eagle River, approx. 12 mi. west of Oxdrift.....	1957	Sept./58	Steel and concrete
105	Trout Lake River, approx. 84 mi. north of Hwy. 17.....	1958	Oct./58	Steel tube piles
105	Chukuni River, approx. 89 mi. north of Hwy. 17.....	1958	Nov./58	Timber, conc. deck
105	Bug River, 8.5 mi. south of Red Lake....	1957	Aug./58	Creo. timber piles conc.
621	Spruce Creek, 7 mi. north of Bergland....	1958	1958	Timber pile, 3" x 8" planks
621	2 mi. north of Bergland.....	1959	1959	Timber pile
613	11 mi. north of Devlin.....	1959	1959	Timber pile

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	When Compl.
17	4 mi. east of Kenora.....	Salt shed	1958	1958
17	4 mi. east of Kenora.....	Washroom	1958	1958
71	Stratton.....	Tool shed	1958	1958
72	D.H.O. patrol yard, Frog Rapids.....	Salt shed	1958	1958
105	Ear Falls.....	4-bay patrol garage	1957	1958
105	Red Lake.....	3-bay patrol garage	1957	1958

Totals of Other Work Done on District No. 20

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	1,051	436.0
Calcium for de-icing roads.....	.....	28	54.0
Off-road parks maintained.....	3	.....	.....
Roads snowplowed and kept open, King's Highways.....	9	.....	585.4
Roads snowplowed and kept open, Secondary Highways.....	.....	.....	326.4
Roadside picnic places maintained.....	15	.....	.....
Routine maintenance King's Highways.....	9	.....	585.4
Routine maintenance, Secondary Highways.....	19	.....	326.4
Salt for de-icing roads (raw).....	.....	354	358.0
Salt in sand, stockpiled.....	.....	1,809	.....
Sand for winter maintenance.....	.....	43,810	.....
Scale houses maintained.....	4	.....	.....
Seeding by department's forces.....(sq. yds.)	87,120	.....	.....
Shrubs received and planted this year.....	30,650	.....	.....
Signs erected or replaced.....	6,125	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	75.0
Snow hedges planted this year.....	.....	.....	11.0
Zone painting on King's Highways.....(gals.)	4,356	.....	287.1
Zone painting on Secondary Highways.....(gals.)	43	.....	2.5

WHITE RIVER PROJECT

E. R. KENNY, P.Eng., Project Engineer

Construction

Considerable progress was made this year as 49.4 miles of grading were let and construction was started to complete the "gap." In addition five structures were completed and nine additional bridges let, all of which were under construction by the end of the fiscal year.

Probably the most outstanding thing that happened was the opening to traffic of the 55-mile section between Marathon and White River. This was made possible with the inauguration of a free ferry service across the White Lake Narrows which operated throughout the winter except for a short period before spring when the water level had dropped to a point where docking the ferry became impossible. 10.75 miles of sand cushion and granular base was let and under way in this section to the west of the Narrows.

Work included 6.5 miles of base pavement laid under Fort William District from 10 to 16.5 miles east of Marathon, and 19.2 miles of base laid in the vicinity of White River.

The construction season was cold and wet, but did not interfere unduly with the work due to the granular and rocky nature of the country.

Maintenance

No regular maintenance was carried out by the Department during the year except for winter snow plowing. A Department grader stationed at White River kept some 35 miles plowed in the vicinity of White River with alternate trips over an additional 15 miles.



Highway 17 Trans-Canada 13 miles north of Agawa River looking towards Coldwater River and Lake Superior, September, 1958.



Section of Highway 17 Trans-Canada, six miles southeast of White River completed except for paving.

At Wawa, 13 miles was kept open by renting contractor's equipment when required. From the Agawa River north for 15 miles plowing was done under a work order placing a contractor's grader at the disposal of the Department full time.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59
17	10 mi. east of Marathon to 21.8 mi. east of Marathon.....	11.8	1957	11.8	.....
17	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.....	12.0	1956	3.0	9.0
17	33.8 mi. east of Marathon to 10.6 mi. west of White River.....	11.4	1956	11.4	.....
17	10.6 mi. west of White River to White River.....	10.6	1955	10.6	.....
17	White River to 8.4 mi. east of White River.	8.4	1955	8.4	.....
17	8.4 mi. east of White River to 18.4 mi. east of White River.....	10.0	1957	4.0	6.0
17	18.4 mi. east of White River to 29 mi. north of Wawa.....	10.0	1957	.....	7.0
17	29 mi. north of Wawa to 19.1 mi. north of Wawa.....	10.0	1958	.....	7.0
17	19.1 mi. north of Wawa to 10 mi. north of Wawa.....	9.1	1958	.....	3.0
17	10 mi. north of Wawa to Wawa.....	10.0	1957	6.0	4.0
17	Wawa to Michipicoten River.....	3.0	1958	.....	3.0
17	Michipicoten River south for 6 mi.....	6.0	1957	.....	5.5
17	6 mi. south of Michipicoten River to 2 mi. south of Old Woman River.....	7.0	1958	.....	.....
17	2 mi. south of Old Woman River southerly for 10.3 mi.....	10.3	1958	.....	.....
17	25 mi. north of Agawa River to 15 mi. north of Agawa River.....	10.0	1958	.....	9.0
17	15 mi. north of Agawa River to 5 mi. north of Agawa River.....	10.0	1956	8.0	2.0
17	5 mi. north of Agawa River to Agawa River.....	5.0	1956	5.0	.....
TOTALS.....		154.6		68.2	55.5



Grading Highway 17 Trans-Canada 15 miles north of Agawa River, September, 1958.

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17	10 mi. east of Marathon to 21.8 mi. east of Marathon.....	11.8	1957	4.2	7.6	94,609
17	21.8 mi. east of Marathon to 33.8 mi. east of Marathon....	12.0	1957	3.0	.....	27,955
17	33.8 mi. east of Marathon to 10.6 mi. west of White River.	11.4	1957	9.2	2.2	350
17	10.6 mi. west of White River to White River.....	10.6	1956	10.6	.....	.....
17	White River to 8.4 mi. east of White River.....	8.4	1956	7.0	1.4	22,691
17	8.4 mi. east of White River to 18.4 mi. east of White River.	10.0	1957	.....	10.0	114,820
17	18.4 mi. east of White River to 28.4 mi. east of White River.	10.0	1957	.....	3.0	34,502
17	10 mi. north of Wawa to Wawa Road.....	10.0	1956	.....	10.0	78,897
17	Wawa Road to Michipicoten River.....	3.0	1958	.....	3.0	13,348
17	25 mi. north of Agawa River to 15 mi. north of Agawa River.	10.0	1958	.....	4.5	44,791
17	15 mi. north of Agawa River to 5 mi. north of Agawa River.	10.0	1956	.....	10.0	93,815
17	5 mi. north of Agawa River to Agawa River.....	5.0	1956	.....	5.0	41,640
17	Approaches to White River bridge at Bremner.....	.....	1957	.....	100%	129
17	Approaches to bridge Depew River.....	.....	1957	.....	100%	171
TOTALS.....		112.2		34.0	56.7	567,718



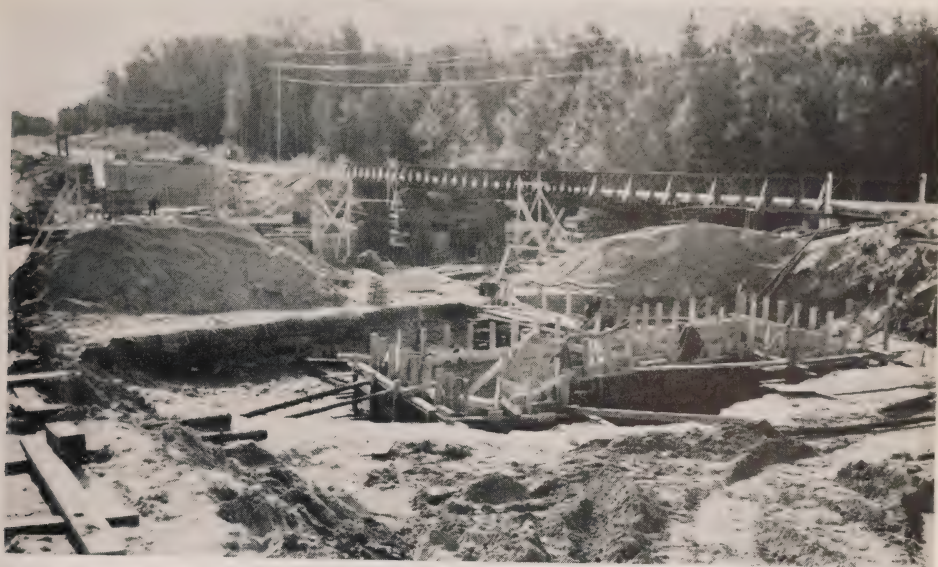
Marion Lake camp on Highway 17 Trans-Canada 15 miles southeast of White River.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1958-59	Tons Placed 1958-59	1958-59 Stock- piled
17	10 mi. east of Marathon to 21.8 mi. east of Marathon....	11.8	94,609	12,052
17	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.....	12.0	27,955	13,369
17	33.8 mi. east of Marathon to 10.6 mi. west of White River.....	11.4	350	18,760
17	10.6 mi. west of White River to White River.....	10.6	.....	6,355
17	White River to 8.4 mi. east of White River.....	.....	22,691	10,649
17	8.4 mi. east of White River to 18.4 mi. east of White River.....	10.0	114,820	.....
17	10 mi. north of Wawa to Wawa.....	10.0	78,897	41,007
17	Wawa to 3 mi. east.....	3.0	13,348	.....
17	25 mi. north of Agawa River to 15 mi. north.....	10.0	44,791	.....
17	15 mi. north of Agawa River to 5 mi. north.....	10.0	93,815	23,565
17	5 mi. north of Agawa River to Agawa River.....	5.0	41,640	17,312
17	18.4 mi. east of White River to 28.4 mi. east of White River.....	.....	34,502	10,358
17	10.6 mi. west of White River to 8.4 mi. east of White River.....	19.0	24,115	.....
17	Depew River bridge approaches.....	.....	171	.....
17	White River at Bremner approaches.....	.....	129	.....
	Approaches to White River.....	.....	1,435	.....
	TOTALS.....	112.3	593,268	153,427

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles in Project	Year Begun	Compl. Previous Years	Miles Compl. 1958-59	Tons Placed 1958-59
17	10.4 mi. west of White River to 8.4 mi. east of White River.....	19.2	1958	....	3	28,585
17	10 mi. east of Marathon to Rouse Lake.....	6.5	1958	.....	.....	.....
	TOTALS.....	25.7	.....	.....	3	28,585



White River bridge, west crossing, 14 miles west of White River on Highway 17 Trans-Canada.
Temporary Bailey bridge is shown on right.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1958-59	Gals. Bit. Used 1958-59	Tons Sand Used 1958-59
17	From 5.2 mi. west of White River to 11.7 mi. west.....	6.5	31,143	625

Bridges Built

Hwy. No.	Location	Year Begun	Compl. Opened Traffic	Type
17	C.P.R. Mainline, C.P.R. overhead 8.4 mi. east of White River.....	1957	Aug. 1958	Concrete on steel beams
17	Depew River, 7.4 mi. east of White River.....	1957	Sept. 1958	Concrete on steel beams
17	White River at Bremner 10.6 mi. west of White River.....	1957	Nov. 1958	Concrete on steel beams
17	Manitouwadge overhead over the C.P.R. Manitowadge subdivision 25.1 mi. east of Marathon.....	1958	Nov. 1958	Rigid frame
17	Cedar Creek 23.6 mi. east of Mara- thon.....	1957	Oct. 1958	Rigid frame

PLANNING AND DESIGN BRANCH**JOHN WALTER, P.Eng., *Director of Planning and Design*****PLANNING DIVISION****J. B. Wilkes, P.Eng.**
*Planning Engineer***ROAD DESIGN DIVISION****D. G. Ramsay, P.Eng.**
*Road Design Engineer***BRIDGE DIVISION****A. M. Toye, P.Eng.**
*Bridge Engineer***LOCATION SECTION****H. A. MANTLE, P.Eng., *Location Engineer*****Location Plans and Field Staff Subsections**

Major bush jobs during this year on which field work was completed included the Chapleau-Foleyet Resources Road (65.7 miles) in the New Liskeard and Sault Ste. Marie districts, and the Atikokan to Fort Frances section of Highway 120 (50.8 miles) in the Kenora and Fort William districts. A total of 1,302 miles of surveys of all types was completed by the field section. A manual on Location Field Procedure was prepared during this fiscal year, and is expected to be published and issued in the coming summer.

A new standard Railway Board Plan was inaugurated by the Location Plans Subsection to meet the requirements of the Board of Railway Commissioners. A record number of 90 Railway Board Plans were issued during this year, most of them to the old standard.

The preliminary design work of this section increased in volume as 1,450 miles of grade and alignment designs were completed and 142 structure site plans were issued to the Bridge Office for design purposes.



New overpass over the M.C.R. on Highway 3 near St. Thomas to replace old overpass, London District.

The strip map coverage of all highways was brought to completion with copies issued to all interested branches of the Department. Secondary Road coverage is not yet complete.

The report of the Field Section and the Location Plans Section has been broken down into five groups for each district:

- (a) Field work in progress as of March 31, 1958.
- (b) Drafting work completed, office drafting in progress March 31, 1958.
- (c) Drafting completed, design work in progress March 31, 1958.
- (d) Design work completed, including structures processed.
- (e) As-constructed work completed.

Summary

District	Field Work in Progress April 1, 1959	Field Work Completed	Drafting Completed	Design Completed	As Constructed
Chatham.....	17.2	47.4	5.9	129.7	.....
London.....	25.8	49.4	34.5	114.9	.....
Stratford.....	16.8	6.3	14.7	90.8	.....
Hamilton.....	8.0	58.7	33.5	72.0	.....
Owen Sound.....	.....	6.6	18.1	36.1	13.8
Toronto.....	50.7	11.7	19.9	48.1	.....
Port Hope.....	.....	35.3	14.7	161.3	.....
Kingston.....	.....	26.2	12.7	101.2	.....
Ottawa.....	.....	73.6	23.8	82.1	.....
Bancroft.....	27.4	11.1	9.8	114.2	.....
Huntsville.....	10.5	15.7	28.4	133.6	.....
North Bay.....	18.0	8.5	48.9	22.5	.....
New Liskeard.....	.....	14.4	19.2	34.7	.....
Cochrane.....	.....	11.4	15.6	19.5	.....
Sudbury.....	.....	6.8	.....	44.9	.....
Sault Ste. Marie.....	.....	48.5	9.8	104.7	.....
Fort William.....	25.0	1.0	39.8	102.1	.....
Kenora.....	.....	11.2	29.5	36.8	.....
TOTALS.....	199.4	443.8	378.8	1,449.2	13.8

In order that a comparison may be made with previous years, the field and office drafting are summarized as follows:

	1957-58	1958-59
Detail surveys.....	1,028 miles	1,302 miles
Bridge site plans.....	128	197
Railway Board plans.....	40	90
Miscellaneous plans.....	15	20

TRANS-CANADA HIGHWAY

	Field Work Completed	Drafting Completed	Design Completed	Bridge Site Plans	Railway Board Plans
Port Hope.....	.....	.....	34.2	2	.....
Kingston.....	9.6	.....	21.7	.....	1
Ottawa.....	.....	.....	10.0	.....	.....
Huntsville.....	.....	.....	19.2	5	1
Sudbury.....	6.8	.....	13.4	.....	.....
Sault Ste. Marie.....	27.2	.....	40.0	3	1
Fort William.....	.....	15.7	74.1	14	2
Kenora.....	.....	.....	36.8	.....	1
TOTALS.....	43.6	15.7	249.4	24	6



Overpass at the junction of Queen Elizabeth Way and Highway 2 at Burlington, Hamilton District.

Photogrammetry Subsection

During the fiscal year this section projected 1,350 miles of centre line location on aerial photographs, produced 22 Study Plans — 17 to the scale of 1 inch equals 400 feet, covering 327,618 acres and 5 to the scale of 1 inch equals 1,320 feet, covering 1,452 square miles. In addition a Detail Plan 1 inch equals 100 feet was compiled from aerial photographs of Highway 401 from Yonge Street easterly to Victoria Park Avenue. The dark-room printed 13,180 aerial photographs to add to our library of approximately 75,000 prints.

Intersection Design Subsection

Summary

	Work Projects	Non-work Projects
Channelizations Completed.....	34	20
Interchanges Completed.....	32	14
Service Road Designs.....	23	....
Pavement Widening Designs.....	5	....
Truck Climbing Lane Designs.....	3	....

Road Closing Plans

Planning was completed for the following townships in preparation for road closing hearings with the Ontario Municipal Board.

(a) Highway 401 East of Toronto:

Townships: Whitby, Darlington, Edwardsburg, Part of Matilda, Richmond, N. Fredericksburg, Ernestown, Kingston (part only), Charlottenburgh, Part of Cornwall and Augusta. 11 in all.

(b) Highway 401 West of Toronto:

Townships: Tilbury East, Raleigh, Harwich, Howard, Orford, Aldborough, Dunwich, Southwold and Delaware. 9 in all.

(c) Peterboro By-pass (new Highway 7):

Townships: N. Monaghan and Otonabee.

Total townships prepared for: 22.

Building Permits

A total of 252 permit applications were processed. These consist of applications for building (residential and commercial — motels, service stations, shopping centres, houses, individual stores).

Property Requisitions

A total of 78 property purchase orders for intersections were reviewed.

Property Sales

A total of 59 intersection property sales were reviewed to include future requirements where necessary.

Miscellaneous

Consulting engineers' plans for the following were reviewed for their geometric adequacy:

- Rockton By-pass
- Highway 17 at Falconbridge Road — Sudbury
- Elliot Lake Road
- Bloor-Dundas (Six Points) future interchange
- Ava Road interchange — Brantford
- Don Valley Expressway
- Sheffield to Peter's Corners
- Ogdensburg Toll Plaza channelization and interchange



Bridge construction on Highway 21 over the Saugeen River showing south side before construction of retaining wall, Owen Sound District.

STATISTICS AND ECONOMICS SECTION

P. E. WADE, P.Eng., Highway Analysis Engineer

During the fiscal year ending March 31, 1959, the Statistics and Economics Section carried out its normal work of collecting information and conducting studies for highway planning purposes. In addition to the routine duties of the section, certain major projects and new responsibilities were undertaken.

MAJOR PROJECTS

Ontario's Roads and Streets

In February, 1959, a report, "Ontario's Roads and Streets" was published. This was a complete survey of all highways and roads in the Province and was a sequel to the report, "A Plan for Ontario Highways," published in February, 1957. The report "Ontario's Roads and Streets" was presented by the Minister of Highways to the Ontario Legislature and represented a significant advance in highway planning and administrative policy. It was a product of the co-operation of all road and street agencies in the Province, resulting in many improved operations and bringing to light many conditions and needs, significantly affecting road and street policy.

Urban Planning Studies

As a result of the report "Ontario's Roads and Streets," the need for further research in the field of urban planning studies was recognized and a unit established to take care of and acquaint themselves with such activities.

Hamilton-Wentworth Regional Study

In collaboration with agencies in the Hamilton-Wentworth area and other branches within the Department, a comprehensive survey was undertaken of road transportation needs in this area. Land use, topography, traffic and other pertinent information was compiled and a long-range plan of arterial road needs in the area was developed.

Railway Crossings Inventory Survey

As a result of the increased Federal subsidy for railroad crossing protection, a complete survey of all railroad crossings on King's Highways in Ontario was carried out and analyzed.

ROUTINE OPERATIONS

The actual operations of the different units of this section — transportation studies, urban studies and inventory — are described as follows:

Transportation Studies

In addition to the road and street needs study and the Hamilton-Wentworth Regional Study which were the major projects participated in by this group, there were many smaller studies and reports completed by this group. Some were carried out in response to queries from townships, counties, and other municipalities, and dealt with the justification of road improvements or assumptions by the Province. Others were concerned with statistical and economic problems concerning traffic growth and the economic justification of special projects. In total over 40 reports were produced on these various subjects.

Urban Studies

This group collaborated with the urban municipalities of the Province in estimating their long-range street needs. The results obtained from the cities were coded and the various totals were tabulated for inclusion in the report, "Ontario's Roads and Streets."

As a result of the experience gained on this project this unit was able to turn its attention to various road and street problems in urban areas. Two important projects underway are studies of the Lakehead area and the Kitchener-Guelph area, both of which are being carried out by this group in co-operation with other interested organizations.

Inventory

This group took part in the Road and Street Needs Study, largely by updating and revising the twenty-year needs study of the King's Highways and Secondary Highways. At the same time the normal tasks of collecting and compiling the engineering inventory of highways, bridges, and railroad crossings, was continued. Numerous listings and maps showing this information were prepared for the use of various persons in the Department of Highways. The extensive files of this highway inventory were made available and utilized by many agencies including the Ontario Department of Transport, Civil Defence, and the Ontario Hospital Commission.

One important project undertaken by the Inventory Group was the survey and analysis of all railroad crossings on the King's Highways and Secondary Highways. A report summarizing the results of this work will be published for use in planning the construction and control of deficient railroad crossings.



Highway 60, just west of Eganville. Hot Mix Paving Contract 57-34, Bancroft District.

TRAFFIC SECTION

W. Q. MACNEE, P.Eng., Traffic Engineer

The work of the Traffic Section was carried out by four groups, namely: Traffic Control, Characteristics, Route Analysis and Traffic Safety.

Traffic Control

During the fiscal year of 1958 numerous studies were conducted in response to requests for traffic signal and flashing beacon installation and signing improvement. A number of studies were also made to investigate the causes of accidents at a number of accident prone locations. Speed Zoning Studies were carried out to establish more realistic speed limits for specific sections of the highway system. Plans were also made for an expanded program of speed zoning studies in the spring and summer of 1959 in order to increase the speed limits on some major highways in conjunction with the point system. In addition to these studies a considerable number of requests were answered by letter or visits to the site by Traffic Control personnel.

Studies were made and reports prepared in 74 cases where requests for traffic signals or flashing beacons were received. Traffic signals were recommended in 14 of these locations. Studies of all existing signal installations were carried out to enable us to establish proper timing based on the traffic requirements.

Miscellaneous studies made as a result of requests for traffic control or personal observation of deficiencies in signing, pavement marking, signalization, etc., totalled 73.

A total of 52 speed zoning studies were completed in this fiscal year. Since we have increased our staff a reduction in the backlog of speed zoning studies was made.



Early morning traffic facing east towards Toronto on the Queen Elizabeth Way which has been widened to six lanes between Highway 27 and the Humber River. This picture was taken at 8.30 a.m., February 3, 1958, from Grand Avenue, Mimico.

The Traffic Control Subsection prepares sign and pavement marking layouts for all interchanges and major channelized intersections, both existing and those constructed during the year. In addition, all designs prepared by the Intersection Design Section are checked by the Traffic Control Subsection to determine whether they can be adequately signed.

A total of 188 sign and pavement marking layouts were prepared during the year. These may be subdivided as follows: Layouts for new interchanges, 22; layouts for new channelizations, 29; layouts for existing interchanges and channelizations, 45; special layouts for reports on traffic studies made during the year, 92.

The result of two years' work was realized in the publishing of the "Policy on Guide Signs" which is a supplement to the Uniform Manual, printed in 1956. This policy was established in co-operation with the new Sign and Building Permits Committee and it provides for a uniform policy on the erection of all types of destination signs, fingerboards, resort area signs, etc.

Manuals were also prepared on —

1. Traffic Markings (patterned after the Canadian Manual) — this has been approved and will be put into effect during the 1959 marking operations.
2. Freeway Signing — this provides a new look in the signing of our freeway system, particularly in the methods of indicating municipalities adjacent to the freeway.
3. Construction Signs — this manual is a first attempt at standardization of signs used on road construction.

We plan on combining all these manuals to form one manual on Uniform Traffic Control Devices for Ontario Highways during the next year.

Characteristics Group

During the course of this fiscal year a total of 538 requests for traffic information were processed. This total was divided into the following categories: Requests from outside the Department, 42; requests from within the Department but outside the Traffic Section, 179; requests from within the Traffic Section, 317; total, 538.

A total of over 17,000 mechanical counts of 24 hours' duration occurring on all classes of roads were recorded during the period. These were mainly from 29 permanent counters and 220 control station counters.

A publication showing the Annual Average Daily Traffic volumes on all significant sections of King's Highway was published covering the years 1955 through 1958. Also shown were the percentage trucks on some 600 sections obtained on July 17, 1958, by the maintenance patrols of the Department. A reappraisal of our permanent counting records is again being made to bring our processing procedures for seasonal adjustments up-to-date.

A number of special projects were completed during the period which included a study to determine the locations of 12 new permanent counting stations, computation of accident data to complete the annual publication of "Accident and Fatal Accident Analyses," a Kardex inventory for all significant sections of King's Highway and the planning of both the July 17, 1958, and January 15, 1959, province-wide classification surveys carried out with the assistance of the Operations Branch.

Number of 24-hour counts taken during the fiscal year ended March 31, 1959:

(a) Permanent Counters.....	10,590
(b) New Control Stations.....	440
(c) Coverage Counts:	
O.D. Surveys.....	1,450
Turning Movements.....	350
Road Closing.....	1,680
Ferries and Bridges.....	1,460
(d) Miscellaneous:	
Classification surveys coverage.....	360
Township needs study.....	500
TOTAL.....	17,110

Route Analysis

One hundred and eighty-four requests, of which seven were from outside the Department and 177 from inside the Department, were processed during the fiscal year 1958-59.

These requests necessitated the planning, processing, and analyzing of 22 origin-destination surveys which involved 131,000 roadside interviews. Ten of these surveys were full cordon surveys, involving 57 stations and 96,000 interviews, in the vicinity of the following centres:— Brockville, Cornwall, Dundas, Kitchener-Waterloo, St. Mary's, Simcoe County, Welland Canal, Wingham, Winchester and York County; 10 were partial cordons, involving 24 stations and 23,100 interviews, in the vicinity of the following centres:— Hespeler, Kingston, London, Newcastle, North Bay, Queensway and Highway 27, Sunderland, Tilbury and Wiarton; 2 were special studies, involving 9 stations and 11,800 interviews, at Downsview and Stoney Creek Traffic Circle; a further 14,500 interviews were processed, 9,500 for Sarnia and 5,000 for Kitchener and Waterloo.

Small origin-destination surveys, turning movements, and volume counts were processed, analyzed, and reported on for Road Closing procedures covering 32 townships.

A project was commenced to develop a Province-wide plan to indicate the travel desires between centres of population of 2,000 or over and the initial work involves the reprocessing of surveys prior to 1955. Work has already been partially finished on 8 of these surveys involving some 30,000 interviews.

Traffic Safety

A brief review of Ontario's traffic situations as it exists today shows about 83,000 miles of highways, roads and streets in various stages of improvement;

they carry almost two million vehicles in various states of repair, driven by more than 2,200,000 licenced Ontario drivers of various degrees of skill, judgment and sobriety. During the calendar year 1958, a total of 1,112 persons were killed in road traffic accidents in Ontario. Of these, 546 (49.1 per cent) lost their lives on the King's Highway System. Pedestrian fatalities alone accounted for 103, or 19.9 per cent, of all persons killed on the King's Highway.

Fatal accidents and fatalities, since naturally they have been subject to complete reporting, probably form a better basis for comparison than accidents in general. The fatality curve is generally downward since 1940 except for the high peak in 1943.

The Traffic Safety Group maintains accident location files, fatality records and carries out other functions necessary for the summarization, analysis and interpretation of accident data for engineering purposes. This is made possible only through the excellent co-operation received from the Motor Vehicles Branch of the Department of Transport and the Department of the Attorney-General. Concentrated efforts are made to determine accurately, the location and other details regarding all motor vehicle traffic accidents reported as having occurred on the King's Highway and Secondary Highways. Every effort is made also, to have a record of accidents occurring on streets in municipalities where Connecting Link Agreements have been made with the Department. The filing of accident reports by highway location enables us to determine sections of highway, specific intersections or other locations where accidents are occurring with frequency.

During the fiscal year, this group processed a total of 841 requests for accident statistics, i.e. the compilation of accident experience records, accident and fatality rates, etc. This information was used extensively in studies conducted by the Traffic Control and Research Groups within the Traffic Engineering Section, the Statistics and Economics Section and the Intersection Design Subsection. On numerous occasions, accident information was compiled for senior officials of the Department.

On most highways there are locations where accidents occur with greater frequency than on the remainder of the highway. These locations, referred to as accident prone locations may be defined as sections of a highway where the accident rate is appreciably higher for three or more consecutive years than the average rate for the highway. The accident rate is the number of accidents per million vehicle miles, making allowance for the volume of traffic using the highway and may be referred to as the number of accidents per travelled mile.

During the fiscal year, special accident experience studies were compiled for presentation as traffic safety evidence at 23 Ontario Municipal Board Hearings in the matter of applications by the Department for the approval of closing of roads which intersect controlled-access highways. The presentation of detailed accident experience records and comparative accident rates for various types of highways greatly supports the Department of Highways' plan and to establish the necessity of closing the roads in question in the interest of highway safety.

The "Summary of Accident and Fatal Accident Analyses for 1955-56 and 57" was published and distributed to senior officials of the Department. Statistics listed in this report cover approximately 8,900 miles of the King's Highway and provides a detailed summary of the locations of all reportable

accidents, accident rates, total property damage, etc. This information is but the first step in the development of a listing of Accident Prone Locations for the Province.

Monthly fatal accident reports were again prepared as has been the case for a number of years, indicating locations on the King's Highways where fatal accidents occurred. The compilation of these reports indicate that during the fiscal year, a total of 451 fatal accidents occurred on the highway alone and that 123, or 36.6 per cent, of these accidents involved one vehicle only. The majority of these accidents occurred when the vehicle was being operated at a speed "too fast for conditions."

To date, accident analyses have been used only to a limited degree, in comparison to its numerous potential uses. However, the studies which have been completed in the Traffic Safety Group have clearly shown their value in developing corrective treatment for existing highways and of even greater importance in establishing future highway needs. It is believed that the studies resulting from the accident filing system are having a beneficial influence on future highway design in Ontario.



As the Burlington Bay Skyway neared completion in May, 1958, with a planned capacity of up to 50,000 vehicles daily, traffic continued to use the Burlington Beach route.

PLAN FILES AND REPRODUCTION SECTION

W. L. JACKSON, Superintendent

The following is the annual report for the above-mentioned section, covering the fiscal year 1958-59.

Plan Files

Summary of new plans received during the year, indexed, numbered (except the P-plans), cross-referenced and filed.

B.	Highway Detail.....	157
C.	Highway Profile.....	191
D.M.	Interchange.....	109
F.	Proposed Revisions.....	299
G.	Railway Crossing.....	100
M.	Miscellaneous.....	5
O.P.	Official.....	33
P.	Land.....	4,435
TOTAL.....		5,329

Included in the above figures are, one "C", 21 "F" and nine "G" plans, which have been allotted numbers and temporarily indexed. Upon the release of these plans by the Location Section, they will be properly indexed and cross-referenced to the existing plans.

Draughting

The plotting of land acquisitions, property sales and new subdivisions on the existing B-plans, from information received from the Land Surveys and Right of Way Sections, also the Districts, is shown on the following summary.

	Balance on hand April 1/58	Received during the year	Completed during the year	Balance on hand March 31/59
"P" (Land Plans).....	289	3,977	3,670	596
Deeds (Purchases).....	81	1,171	1,160	92
Deeds (Sales).....	42	458	428	72
Subdivisions.....	17	406	401	22
TOTALS.....	429	6,012	5,659	782

Plan Service

During the year, some 56,430 plans were charged out for general use or inspected in the office, this is an average of 4,700 plans per month.

The following summary shows the number of plans in use by the different sections on March 31, 1959.

559 Jarvis St.		1173 Bay St.	
Location Section.....	703	Right of Way Section.....	154
Intersection Design.....	91	Road Design.....	123
Traffic Section.....	8		277
	802		
East Block		Downsview Bldg.	
Planning and Design Office.....	33	Contract Checking.....	125
TOTAL.....		1,237 Plans	

In addition, all requests for prints received from the District or Regional Offices, Land Surveys, Property and Bridge Sections were fulfilled but no record of this work is kept.

Plan Reproduction

During the year 58,773 tracings were handled to make 390,965 prints of all types, a total of 2,025,679 lineal feet were run, which produced 4,835,078 square feet of prints. These figures turned into miles and acres, show we ran 383.64 miles of prints, which prints would cover an area of 111.0 acres. This is an increase of 20 per cent over the production of the previous year.

Some 255,060 square feet of prints were produced by commercial companies during the year. The larger percentage of these prints, being for the Bridge and Contract Control Offices, were rush orders that we could not handle in the time they were required.

The distribution summary of prints, given in square feet is:

Planning and Design Branch

Location Section.....	1,754,309	
Road Design Section.....	885,359	
Bridge Section.....	230,451	
Traffic Section.....	40,096	
Statistics and Economics Section.....	8,734	
Cartographic Section.....	6,216	
Planning Accounts.....	1,006	
		2,926,171 sq. ft.

Other Highway Branches

Contract Control.....	1,790,316	
Map Office.....	116,316	
Personnel.....	2,275	
		1,908,907 sq. ft.
TOTAL.....		4,835,078 sq. ft.



C.P.R. overhead east of White River on Highway 17 Trans-Canada.
Note space has been provided for double tracking.

CARTOGRAPHY

C. P. ROBINS, Supervisor

Early in the year the map at a scale of 4 miles to 1 inch of Carleton, Lanark, Leeds and Grenville was printed from the base revised in 1957.

During the year the bases were revised and maps printed at the same scale as mentioned above of the following combinations: — Lincoln, Wentworth, Haldimand and Welland; Brant, Elgin, Middlesex, Oxford and Norfolk; Peel, Halton, Dufferin, Wellington, and Waterloo; Northumberland and Durham, Victoria and Peterborough; and York and Ontario.

Towards the end of the year the bases for the single map Haliburton and the combination Frontenac and Lennox and Addington were revised in preparation for printing new maps early in 1959.

Some work was done on the bases for the single map of Parry Sound and the combination Prescott and Russell, and Dundas, Stormont and Glengarry so as to keep them up to date.

Work proceeded on making new bases for the southern portion of the District of Sudbury from which maps would be printed at a scale of 4 miles to 1 inch.

The leading map companies in the United States were supplied with information concerning new pavements and new highways so as to bring their road maps of Ontario up to date. At the request of the Ontario Motor League their road book and road map were checked over and a number of revisions in pavements and highway numbers were noted on them.

Some assistance was given to the Cartographic Section of the Department of Lands and Forests in the preparation of a new edition of one of their maps.

Early in the year plans at a scale of 1 mile equals 1 inch of Norfolk and Waterloo counties were completed, having been started in 1957. During the year plans of the counties of Middlesex and Dundas, Stormont and Glengarry were completed. Towards the end of the year plans of the counties of Oxford and Prescott and Russell were started.

Plans of the following townships were redrawn and brought up to date: — Adjala, Aldborough, Augusta, Bonfield, Boulter, Caistor, Caledon, Calvin,



Finished grade, Highway 98, one-half mile east of Charing Cross, Chatham District.

Chinguacousy, Chisholm, Clarendon, Crowland, Digby, Dunn, East Ferris, East Gwillimbury, Emily, Eramosa, Erin, Esquesing, Fenelon, Front of Escott, Front of Leeds and Lansdowne, Gainsborough, Georgina, Guelph, Humberstone, Markham, McCraney, Moulton, Nassagawoya, Nichol, North Cayuga, North Gwillimbury, Olden, Oneida, Papineau, Pelham, Phelps, Pilkington, Puslinch, Rama, Rear of Leeds and Lansdowne, Seneca, Sherbrooke, Springer, South Burgess, South Cayuga, South Crosby, Tilbury North, Toronto, Toronto Gore, Verulam, Walpole, West Ferris, Whitchurch, Widdifield, Willoughby.

Plans of the following villages were drawn: — Athens, Barry's Bay, Bonfield, Cache Bay, Chalk River, Eganville, Fenelon Falls, Port Carling, and the Improvement District of White River.

During the year work was done on the following miscellaneous jobs: —

1. Revising county and township plans to show new highways and new annexations to the various municipalities.
2. Checking county by-laws.
3. Reviewing subdivision plans.
4. Revising surface sheets for use in the section and for use in the head office of the Municipal Roads Branch.
5. Revising progress charts and mileage sheets.
6. Using information from (5) to calculate the totals of kinds of pavements in each of the counties and districts for King's Highways and secondary highways.
7. Marking new highways on militia sheets for the Federal Depts. of Mines and Agriculture.
8. Revision of wall maps for the various branches of the Department.

Many revisions were made on the road map bases in preparation for printing the 1959 road map. These consisted of showing new pavements, new King's Highways and secondary highways, new place names, new indexes for use by the printer. All printed matter was proof-read twice and corrections made before the printer was allowed to use the proofs. After the bases went to the printers, a great deal of checking was carried out to ensure that all revisions would appear on the map.



Grading in progress on Highway 400 between Crown Hill and Craighurst, Owen Sound District.

ROAD DESIGN DIVISION

D. G. RAMSAY, P.Eng., Road Design Engineer

Projects pre-engineered, computed and checked included:—

Highway	Grading Projects	Paving Projects	Structures
Dual.....	138.5 miles	84.84 miles	53
T.C.H.....	170.62 “	204.56 “	31
Others.....	338.92 “	314.92 “	29
TOTAL.....	648.04 miles	604.32 miles	113

During the 1958–59 fiscal year, approximately 300 projects were pre-engineered and submitted to the Contract Control Office for advertising. This was accomplished during a period of extensive decentralization and staff transfers. At the end of the fiscal year, 65 per cent of a total staff of 330 were located in Regional Offices at London, North Bay, Kingston and Port Arthur.

In the Fall of 1958 and Spring of 1959, the Road Design Section conducted an extensive training program, which included courses for Senior Engineers, Estimators and Draughtsmen.

The mode of preparation of contract drawings progressed at a very rapid rate. Drawings prepared and bound in book-form have pushed the long, bulky contract rolls into obsolescence. Over 90 per cent of contract drawings are now produced in this way, which considerably facilitates handling, checking and production of good quality draughting. Towards the end of the fiscal year, contract drawings were being prepared in “book-form” and reduced in overall size to a very suitable 24" x 12". It is anticipated that this size will be used extensively in the future and, when combined with improved draughting, will result in a final product second to none.

The preparation of an “Estimating Manual” was undertaken, outlining the procedures and methods employed in the Road Design Section, in the preparation of estimates. When completed, this will serve as an invaluable guide to all Department employees whose work involves the design of highways and the estimating of quantities.

The number of Highway Standards books in circulation increased to 750, with 30 new standards, 55 revised standards and approximately 130 special standards approved, issued and prepared for use in the Department. Due to the immensity of the circulation of these books, distribution was taken over by the Office Services Section.

The Electronic Computing Centre processed almost 300 miles of projects for this Section and the Liaison Engineer investigated new electronic programs which might prove time-saving in our present operations.

Close to 100 intersections, cloverleaf or channelization were detailed in the Intersection Design Group.



Bridge construction on Highway 5 at Cooksville showing C.P.R. overhead bridge, Toronto District.



Bridge over the Trent River on Highway 401 looking east from interchange with Highway 33. Dam and Trent Canal are shown upper left. This section of Highway 401 was officially opened October 7, 1958.

BRIDGE DIVISION

A. M. TOYE, P. Eng., Bridge Engineer

Bridge Planning

Bridge site inspection for pre-engineering was conducted at the sites of 96 river crossings for the 1959-60 program. About 50 per cent of the 80 grade separation sites were also inspected. The purpose of this work was to assess the suitability of the proposed sites.

Changes in the topography were noted as possible indications of the underlying geological structure and a study of these enabled alternative sites for soil investigations to be suggested.

Enquiries regarding some 40 other structures involved in the planning of further schedules, during the year necessitated site inspections to determine the suitability of the structure for widening.

Soil investigations were completed during the year at a total of 159 structure sites. Of these 125 were carried out by private consultants and 34 by the D.H.O. Soils Branch.

Hydrology studies were carried out on 132 creek and river crossings during the year. This included inspection of the site, the calculation of water discharges, the search of available Hydrology records, and discussions with various conservation authorities.

Bridge Design

It is still found necessary to employ private consulting engineers to supplement the bridge division staff. Of the 144 new designs begun during the year, 98 were by consultants. Plans were also prepared by the Bridge Division Staff for approximately 500 concrete culverts, many of which had to be specially designed.

All highway bridges designed by consultants were examined and approved by engineers of the Bridge Division. This included 115 preliminary designs and 101 final designs. The Bridge Division also has the responsibility for examining and approving bridge and culvert plans for Municipal Road structures: 598 such structures were processed during the year.

Contract estimates and special provisions were prepared for a total of 182 structure contracts. An additional 49 were prepared for structural steel contracts. The total estimate value of these contracts was \$27,777,826, of which \$22,958,658 was allowed for general contracts and \$4,819,168 for structural steel contracts. A total of 146 bridge contracts were awarded during the year, 34 of which were for structural steel consisting of some 9,400 tons.

During the year 1,400 material requisitions were prepared specifying the quantity and quality of the various items costing some \$4,000,000. Arrangements were also made to have them inspected by private companies specializing in this work. These requisitions covered a great variety of materials including 14,000 tons of reinforcing steel, 367,247 feet of piling and 35,254 feet of steel handrailing.

During the last quarter of this year, a start was made with the introduction of Electronic Computations in the Bridge Division. The calculation of elevations for about 15 bridges as well as the solution of some matrix problems



Highway 401, passing under Edward Street at Prescott, Kingston District.

used in structural analysis, was undertaken at the Electronic Computation Centre and found to be economically justified. It is anticipated that wider use will be made of the electronic computer during the coming year in the analysis and design of bridges.

The Bridge Division provides assistance to the Operations Branch in the form of technical supervision of the specialized operations. This covers the approval of the contractors' proposed bridge falsework plans, supervision of load tests of driven piles and spot tests of pile driving, supervision of the erection of all structural steel bridges, supervision of all casting, stressing and hoisting of pre-stressed concrete beams, and providing the solutions to numerous field problems as they arise.

Because of the large number of bridges being built it is necessary to carry on construction through the winter. The protection of concrete placed in cold weather presents many problems. During the past year a study was made into the use of insulated forms to take the place of conventional heating methods which are often hazardous. Practical tests were carried out by the Bridge Division in conjunction with the Materials and Research Section. Specifications are now being written to govern this method of protecting concrete.

A review of the Specifications for Structures (Form 9) was also begun in conjunction with the Materials and Research Section and the District Construction Engineers. Extensive revisions are being made to bring these specifications up to date.

Some 26,667 feet of bridging, comprising 119 structures was completed during the calendar year. Included in these were 19 railway overheads—eight over the Canadian Pacific Railway, seven over the Canadian National Railway, one over the Algoma Central and Hudson Bay Railway, one over the Thousand Islands Railway, one over the Michigan Central Railway, and one over the Toronto, Hamilton and Buffalo Railway.

Two structures were completed on Highway 400 at Barrie. These are at Anne Street and Teston Side Road.

Thirty-six structures were completed on Highway 401 as follows:— 14 on the Toronto to Milton section, 1 on the London section, 9 on the Oshawa to Cobourg section, 2 on the Trenton section, 1 on the Belleville to Napanee section, 9 on the Gananoque to Brockville section.



Old bridge at Kakabeka Falls, Highway 17 Trans-Canada, Fort William District.

Three structures were completed on the Q.E.W. including the Burlington Skyway which was opened to the public on October 30, 1958. One structure was completed on the Lindsay By-pass over the Canadian National Railway. Two structures were completed on the Orillia By-pass, one over the Canadian National Railway, the other at the junction of Highways 11 and 12. One structure was completed on the Ottawa Queensway at Cyrville Road. One structure was completed on the Lakeshore Expressway completing that section west of the Humber River.

Thirty-three structures were completed on the Trans-Canada Highway, as follows:—two on Highway 7 near Lindsay, one on Highway 133 near Peterborough, one on Highway 17A (Ottawa Queensway), one on Highway 15 at Innisville, two on the Orillia By-pass, five on Highway 103 north of Wau-
baushene, one on Highway 69 north of Parry Sound, eight on Highway 17 in the gap between Agawa and White River, 12 on Highway 17 on various sections, some of which are being brought up to Trans-Canada Highway Standards.

A complete list of all structures completed is given in Appendix No. Four. Not included in this list are 477 concrete culverts in spans ranging from 4 to 20 feet and costing \$2,023,000.



New bridge at Kakabeka Falls, Highway 17 Trans-Canada, Fort William District.

SERVICES BRANCH

C. A. ROBBINS, P.Eng., *Director of Services*

H. S. HOWDEN, P.Eng., *Assistant Director of Services*

The Services Branch consists of eight sections which provide various "services" to other branches of the Department. The staff of the branch is located partly at head office and partly at regional offices in Toronto, London, Kingston, North Bay and Fort William.

During the year, regional services managers were appointed for each of the regional offices. Under the direction of the Director of Services the regional services manager is responsible for co-ordinating and expediting the work of the various sections of the Services Branch in a region. He ensures that the policies and the directions of the section head are carried out by the staff of the Services Branch in a region.

The regional services managers are:— H. A. Aron, Northern Region; D. W. Baird, Eastern Region; N. D. Bennett, Central Region; M. W. Robinson, South-Western Region; D. F. Walton, North-Western Region.

The eight sections of the Branch are:— (1) Buildings, (2) Equipment, (3) Land Surveys, (4) Office Services, (5) Property, (6) Signs and Building Permits, (7) Supply, (8) Tenders.

Building Section

F. E. Cavell, Superintendent

Youngest of the eight sections of the Services Branch, the Buildings Section, is responsible for the building requirements, building services, communications and allocation of office space. The section designs buildings, prepares architectural plans and acts as liaison with the Department of Public Works in all matters pertaining to buildings occupied or required by the Department of Highways.

During the fiscal year, the Section arranged with the Department of Public Works for the construction of six garage buildings. Two frame garages were erected by D.H.O. forces.

A summary of the year's operations shows:

1. Buildings and Additions Completed:

- | | |
|----------------------------|--------------------------------------------|
| (i) Sudbury District | — new 9-bay office building |
| | — new 9-bay unheated storage garage |
| | — 14-bay repair garage, McFarland Lake |
| (ii) Kingston District | — new 9-bay heated storage building |
| | — new 14-bay repair garage |
| (iii) Bancroft District | — 14-bay garage, Bancroft |
| (iv) Fort William District | — 4-bay steel garage, Geraldton |
| (v) Toronto District | — additional 12 bays to garage and storage |
| (vi) Ottawa District | — Repair garage |

Additions completed:

Kingston District	— office and tool room, Barriefield
Fort William District	— 4-bay patrol garage, Marathon
Ottawa District	— addition to patrol garage, Morrisburg
Kenora District	— 3-bay patrol garage, Red Lake
Port Hope District	— addition to district office, Port Hope
	— 5-bay patrol garage, Hwy. 28 and 115

2. Buildings Under Construction:

- (i) Downsview — addition for Regional office
— addition for Central Stores storage
— new administration building
- (ii) Kingston District — 4-bay patrol garage, Arden
— 6-bay patrol garage, Marysville
- (iii) Port Hope District — 5-bay patrol garage, Bloomfield
- (iv) Ottawa District — 5-bay patrol garage, Carleton Place
- (v) Hamilton District — 11-bay patrol garage, Burlington

3. Planning and Preparation of Building Sites: Planning and preparation for building were undertaken for 42 building sites. This work included preparation of plans, preliminary grading, drainage and fill. Thirty-four wells were drilled for water supply.

4. Repairs and New Equipment: Repairs and new equipment included water pumps, ventilation units, furnaces, overhead doors, security fencing, gasoline pumps, hydraulic lifts, stockroom bins, fire fighting equipment, painting and other renovation.

5. Inspection of Buildings and Sites:

- (i) Buildings and Construction — 606 inspections
- (ii) Property Sites — 47 inspections with
29 sites approved

6. Planning and New Designs:

- (i) London Region — design for new office building completed
- (ii) Ottawa District — plans for new office in preparation
- (iii) Hamilton District — plans for new office in preparation
- (iv) Downsview (new Administration Building)
— plans for floor layout and furniture
location in preparation

7. Survey of Future Building Needs: A survey of the building needs of the Department for the next 10 years was completed. This survey indicated that 509 new buildings will be required. Of these 188 are small size such as salt sheds; 247 patrol garages; the balance buildings of a major nature.

8. Office Space Accommodation: A comprehensive survey and study of office space area and use was made during the year with recognized standards being established to provide for efficient use of the space available. The decentralization program and movement of various functions and personnel from head office to the regional offices required careful planning and utilization of office space at regional offices and head office.

9. Communications: The communication systems of the Department, an extremely important function, received intensive study during the year. Additional operator positions and automatic switching equipment were added at Downsview to provide service for the new administration building etc.

Radio, telephone and intercommunication systems were installed at the Burlington Bay Skyway, and toll Plaza. A mobile radio system was installed in Toronto District to provide more efficient control of operations.

A general increase of 12 per cent in telephone equipment and operation occurred during the year.

Equipment Section

L. Westlake, Superintendent

The Equipment Section, through its head office and field supervisors, is responsible for the preparation of specifications, inspecting, testing and developing new machines and for the supervision of maintenance of all Department equipment. One of the major functions is the inspection of major equipment before delivery to the Department to ensure it meets the specifications.

The mechanical training school operated throughout the year. Courses were conducted for highway equipment supervisors, mechanical supervisors, shop foremen, preventive maintenance mechanics, apprentice mechanics, welders, equipment operator instructors, and other specialized groups. Thirty-eight courses were conducted during the year. Instruction is provided by qualified Department instructors and by the training staff of various private companies.

The Section also supervises the Equipment Operators' training and safe-driving program and an annual Rodeo in which all Districts participate and compete. Safety supervisors held meetings and lectures in the Districts. These are supported by films and slides on safety. Representatives of the Section in conjunction with representatives of the Operations, Personnel and Traffic Branches reviewed reports of all accidents.

The Head Office Garage (District 42) checks and services new equipment, services equipment attached to Head Office sections and carries out development on existing and new equipment. During the year two new type zone stripers for dual lane striping were designed and built in this garage. The Instrument Repair Shop operated throughout the year.

Revised equipment and equipment operation costing procedures using an I.B.M. punch card and tabulating system has been in effect for one year. It is proving efficient and has provided additional detail in less time than the previous methods. Depreciation and other cost elements are now being processed through the Department's computer, thus making figures covering miles travelled, hours operated, gas and oil consumption, repair costs, labour and parts etc. available on very short notice. These figures can be detailed by make, class, type of equipment etc. and are provided by districts or in total for the Province.

The following equipment was operated by the Department during the year:

Auger, Earth.....	4	Sand Driers.....	18
Bender, Bar.....	3	Sand and Gravel Screen...	1
Cameras.....	104	Scales, Highway.....	61
Carryalls.....	1	Snow Plowing Equipment:	
Cars, Rail.....	2	Blowers, Tractor Mounted...	2
Collectors, Dust.....	1	Blowers, Truck mounted.....	13
Compressors.....	184	Spray Painting Units, portable....	2
Distributors, Emulsion.....	179	Sprayer, Weed.....	26
Ditchers.....	2	Stripers.....	18
Eductors.....	7		
Ferries.....	7	Survey Instruments:	
Gradalls.....	8	— Levels.....	535
Gradebuilders.....	80	— Transits.....	582
Heaters.....	42	Hydraulic Units, Electric....	97
Loaders.....	74	Hydraulic Units, Full.....	420
Maintainers.....	35	Hydraulic Units, Hand.....	6
Maintainers, Multiple Blade.....	3	Hydraulic Units, Power....	9
Mixer, Asphalt (hot).....	2	Plows, One Way.....	571
Mixer, Cement.....	25	Plows, Reversible Blade.....	18
Mixer, Cold Patch.....	22	Plows, Vee.....	421
Planers.....	4	Tractors, Track.....	84
Plant, Crushing.....	2	Tractors, Wheeled.....	406
Plant, Portable Screening.....	5	Trailers.....	267
Conveyors.....	8	Welder, Arc.....	51
Copiers, Print.....	7	Seeders, Hydro.....	16
Cranes, Hydraulic.....	5	Shovel, Hyd. Swing type.....	1
Cranes, yard.....	4	Shovels, Power.....	8
Drills, Core.....	2	Swamp Buggy.....	1
Finishers, Asphalt.....	3	Spreaders, Mulch.....	27
Graders, Leaning Wheel.....	19	Sweepers, Power.....	18
Graders, Power.....	309	Wings, 10' Left.....	1
Mixer, Paint and Bead.....	16	Wings, 10' Right.....	60
Mixer, Pulvi.....	18	Wings, 11' Left.....	1
Moto-Patcher.....	4	Wings, 11' Right.....	74
Moto-Paver.....	1	Wings, 12' Left.....	5
Plant, Stationary Power.....	45	Wings, 12' Right.....	514
Pump, Dispensing.....	36	Wings, 14' Right.....	27
Rollers.....	64	Trucks (including 7 cars).....	1,486
Sand, Bodies, special.....	330	Truemetres.....	18



Dual-lane zone striper, developed and built by the Equipment Section, Department of Highways, is shown in operation on the Queen Elizabeth Way.

The new equipment listed below was purchased to replace obsolete and worn out equipment and to meet the need for additional equipment. It is included in the list of equipment operated as shown above.

Auger, Earth.....	2	Snow Plow Equipment:	
Bodies, Sand, special.....	47	Blowers, Tractor mounted.....	2
Cameras.....	90	Blowers, Truck mounted.....	1
Compressors.....	8	Copiers, Print.....	7
Conveyors.....	1	Crane, Hydraulic.....	1
Distributor, Emulsion.....	3	Drier, Aggregate.....	1
Ditcher.....	1	Graders, Power.....	20
Gradebuilders.....	8	Roller, Wobbly Wheel.....	1
Heater, Bituminous.....	1	Plant, Stationary Power.....	1
Kettles, Maintenance.....	8	Survey Instruments:	
Loaders.....	24	— Levels.....	95
Rollers.....	3	— Transits.....	85
Plant, Portable Screening.....	1	Tractors, Track.....	10
Scales, Highway.....	10	Tractors, Wheeled.....	49
Seeders, Hydro.....	3	Trailers, Office and Sleeper.....	70
Spreader, Mulch.....	3	Trucks (including 2 cars).....	315

Land Surveys Section

W. D. Ratz, P.Eng., Superintendent

Land Surveys Section is responsible for carrying out all land surveys and the preparation and registration of all plans required for the acquisition or disposal of land and the assumption, reversion, designation and closing of highways. It was necessary to employ a limited number of Ontario Land Surveyors to supplement the section's staff of surveyors in order to cope with the proposed construction program and the surveying of secondary highways.

During the fiscal year Land Surveys Section obtained registration of 2,148 plans in the proper Land Titles or Registry Offices.

During the fiscal year 186.85 miles of highway were designated as controlled-access highways. This includes redesignation of portions of the Queen Elizabeth Way. The total mileage of controlled-access highways in the Province now stands at approximately 1,200 miles. One hundred and one interchange areas were designated as controlled-access highways. No mileage was added for these areas. The details appear in Appendix 3 of this report.

During the fiscal year, 144.4 miles of streets used as connecting links between parts of the King's Highway or Secondary Highways in numerous cities, towns and villages were designated as Connecting Links. Connecting Link Agreements covering 52.03 miles of streets, were entered into with municipalities.

Nine training courses were conducted for Land Surveys staff during the year. These were attended by 119 candidates of which 108 qualified. In addition 272 employees tried qualifying examinations without attending a course, 148 of this group passed. Land Surveys is continuing its apprenticeship program for Ontario Land Surveyors and during the past year 18 apprentices were successful in the final examinations.

Since the decentralization program started in 1955, the field staff of Land Surveys has been relocated in the five regions. It is expected that by the end of 1959 the draughting and clerical staff will have been relocated and the regional staffs will function as a separate unit under the direction and control of a small head office group.

Appendices in this Annual Report give details of Controlled-access Highway plans, and designations and reversions of sections of the King's Highway and Secondary Highway Systems.

TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
<i>Plan Types A-H Inclusive — Acquisition of Lands</i>			
"A"	Land Plans.....	1,508	455.520
"B"	Amended Land Plans.....	89	
"C"	Land Plans Acquiring Limited Interest.....	23	2.709
"D"	Plans of Abandonment.....	133	14.607
"E"	Crown Land Plans.....	187	253.156
"F"	Amended Crown Land Plans.....	7	
"G"	Crown Land Abandonment Plans.....	2	1.040
"H"	Navigable Waters Protection Act Plans (Crown).....	9	1.798
<i>Plan Types I-M Inclusive — Assumption of Existing Highways</i>			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway.....	3	9.400
"J"	Amended Preliminary Assumption Plans.....	1	
"K"	Assumption Plans.....	131	258.640
"L"	Assumption Plans.....	31	22.448
"M"	Amended Assumption Plans.....	3	
<i>Plan Types N-P Inclusive — Designation of Highways</i>			
"N"	Proposed Highway Plans.....	41	
"O"	Highway Plans.....	179	811.233
"P"	Controlled-Access Highway Plans.....	25	
<i>Plan Types Q-T Inclusive — Transfer and Closing of Highways</i>			
"Q"	Reversion to Road Authority.....	6	9.750
"R"	Transfer to Municipality.....	50	42.223
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council.....	23	13.209
"T"	Road Closing Plans (Ontario Municipal Board).....	19	
<i>Plan Types U-X Inclusive and others — Miscellaneous and Special Plans</i>			
"U"	Plans to Illustrate Descriptions.....	459	117.251
"V"	Survey Plans of Boundaries — Supplementary.....	13	19.408
"W"	Indian Affairs Plans.....	4	1.673
"X"	Connecting Link Descriptions and Agreements:		
	(Designation).....	100	144.400
	(Agreement).....		52.030
	St. Lawrence Seaway Project.....	29	36.320
	Miscellaneous Plans.....	38	20.143
	TOTALS.....	2,663	2,286.958

Office Services

F. C. W. Flegg, Superintendent

The Office Services Section located at Downsview is responsible for:

1. the procurement and distribution of office supplies, furniture, equipment, stationery and medical supplies to all Branches of the Department;
2. the operation of Central Records;
3. providing mail service for all departmental offices in the Toronto area;
4. reproducing by various methods forms, reports, etc., for the various branches of the Department;
5. microfilming records.

In general, all items required for Department operation were in normal supply.



Records of the Department of Highways are microfilmed for future reference.

Value of items requisitioned and supplied during the fiscal year ended March 31, 1959 was:

Stationery and white prints.....	\$ 727,640.50
Printing supplies.....	29,723.01
Medical supplies.....	6,682.43
Equipment and furniture.....	381,573.45
TOTAL.....	\$1,145,619.39

Microfilming of Head Office records was continued and, in addition, the records of District 5, Owen Sound, and District 6, Toronto, were microfilmed during the year.

Property Section

H. Barry, Superintendent

The Property Section is responsible for the acquisition of all property required for highway purposes and for the settlement of claims arising therefrom. The Section is also responsible for the management and ultimate disposal of surplus properties.

A total of 4,249 agreements were negotiated with property owners during the year. A total of 1,589 unpaid agreements were carried over from the previous year. Total number of agreements paid in 1958-59 was 4,777.

The purchase of property for No. 401 Highway progressed at an accelerated pace, 412 agreements being taken as against 274 for the previous year. At the end of the year, 94 per cent of the property required for this highway had been purchased, leaving 237 properties out of a total of 4,578 yet to be acquired.

A total of 41 applications for hearings before the Ontario Municipal Board

were made. Fifteen of these were settled without a hearing, awards were made by the Board in two instances, and the balance are in various stages of processing.

During the year, 1,077 surplus properties were recorded which, added to the carryover of 2,055 from the previous year totalled 3,132 properties. Of these, 883 were disposed of and produced a revenue of \$1,104,333.99. In the latter part of the year, the disposal of surplus property was, for the most part, by public auction, rather than by public tender. The results have been very satisfactory and it is planned to continue to dispose of surplus property by auction whenever practicable.

This year marked the decentralization of office operations with the opening of regional offices at London, Kingston and North Bay. The Toronto Regional Office, which also handles the office operations of the Fort William Region, is expected to move into separate and new quarters within a few months. This decentralization involved 111 employees, 28 of whom were transferred from Head Office to regional offices away from Toronto.

The staff of the Pre-Appraisal Group, established last year, was enlarged by the transfer of 12 employees to this group. An appraisal course was given to 19 property agents and a course in conveyancing to 13 members of the office staff. Eighteen property agents were taken on the staff.

Considerable progress was achieved in the streamlining of methods and procedures with notable end results. This work is proceeding. A Property Section manual was produced and printed.

Sign and Building Permits Section

E. G. Crowhurst, Superintendent

The Sign and Building Permits Section is responsible for the administration of the regulations regarding the location of buildings, gasoline pumps, signs, etc., adjacent to the provincial highways and for the regulations regarding entrances to, or encroachments upon, these highways. This section maintains general supervision over permits issued by the districts, and now has a staff of supervisors located in the various regional offices to assist and advise Operations Branch personnel when requested to do so. Permits for controlled-access highways are issued by the Sign and Building Permits Section.

The new Policy on Guide Signs places responsibility for all guide signs on the right-of-way under the Operations Branch. A new manual of procedures is being prepared to clarify the policies and procedures related to the Sign and Building Permits Section function.

PERMITS ISSUED AND REVENUE

TYPE	HIGHWAY CLASS		No. OF PERMITS	REVENUE
Building	Controlled-access — approximate value of construction approved.....	\$19,278.490	379	N/A
	Not controlled-access — approximate value of construction approved.....	50,583.000	4,589	N/A
Gasoline Pumps	All highways.....		3,920	\$41,757.50
Sign	Not controlled-access.....		3,685	\$23,180.50
Entrance	All highways.....		75	N/A
Encroachment (E-40)	All highways.....		1,237	\$12,370.00

Supply Section

R. W. Rawlings, Superintendent

The Supply Section is responsible for purchasing all Department construction and maintenance materials and equipment, the operation of a central stores warehouse in Toronto, the maintenance of Bailey Bridge stocks throughout the Department and the supervision of all material inventories held in the various districts.

To overcome steel shortages created by a strike in the industry during the Summer and Fall of 1958, Central Stores facilities for fabricating reinforcing steel were enlarged and stock piles supplemented by large-scale purchases from the U.S.A. During the months of August, September and October, steel was supplied by Central Stores for 63 Department contracts.

A reconditioning and stockpiling depot for Bailey Bridge materials was placed in operation at Kingston making a total of five such depots in the Province. During the year 40 Bailey bridges were erected from material supplied by these depots and 44 structures were dismantled. At March 31, 1959, there were 123 Bailey Bridges in use throughout the Department and plans were in hand for erection of an additional 35 bridges.

During the fiscal year 233 individual sales of surplus and obsolete materials were arranged and conducted. Twenty of these were auction sales, a method of disposal which is becoming increasingly effective in this field.

Procurement of a growing percentage of the maintenance material requirements has been delegated to district staff. This buying is conducted locally on a competitive basis and is under close supervision of the Supply Section. Many economies have resulted from this arrangement.

Tenders Section

W. T. Whittle, Tenders Secretary

The Tenders Section is responsible for the placement of advertisements, the processing of advertising accounts, the distribution of tendering material and the collection of fees involved. The Section is also responsible for the receipt and safeguarding of completed tenders, the arranging of tender openings, the recording of proceedings at tender openings and for the publication of awards. The Section performs all or part of the above functions for engineering contracts, material and equipment purchases, surplus property sales and obsolete equipment and material sales.

Disposal of surplus property by auction sale rather than tender has considerably lowered the number of tenders for property sales processed by the Section. This trend is expected to continue.

The Tenders Section now distributes the bi-monthly "Proposed Schedule of Tender Calls" prepared by the Contract Control Engineer. Effective April 1, 1959, the names of contractors obtaining tendering material were also released.



The public opening of all tenders on Department of Highways contracts follows a well-organized routine.
Every tender is checked for accuracy as it is opened.

Tenders called during the year were as follows:

(a) *Engineering Contracts*

Contracts called	477
Tendering material released (tender forms only)	15,528
Tendering material released (plans, profiles, etc.)	4,726
Tenders processed	3,490
Average number of bids per contract	7.31

(b) *Engineering Contracts* — Invitation Bids (Contracts
less than \$10,000.00 in value)

Invitation bid contracts called	40
Tendering material released	238
Tenders processed	153
Average number of bids per invitation contract	3.82

(c) *Property Sale Transactions*

Sales called	220
Tenders processed	783
Average number of bids per sale	3.56

(d) *Material Requirements*

Number of inquiries	1,349
Tenders processed	7,327
Average number of bids per inquiry	5.43

(e) *Obsolete Material Sales*

Number of sales called	45
Tenders processed	185
Average number of bids per sale	4.11

PERSONNEL BRANCH

Director of Personnel, J. POGUE

The Personnel Branch administers the selection and engagement of personnel, staff movements, training, organization and classification, personnel records, and provides guidance and advice on all personnel functions.

Employment Section

The Employment Section is responsible for consulting with Branch Heads and District Engineers to ascertain employment requirements and for carrying out recruitment, selection, placement and transfers.

There were 4,814 replacements and additions to staff during the period from April 1, 1958, to March 31, 1959. This figure includes 2,041 seasonal workers and 579 students. The Employment Section hired 662 persons, the remainder of the total number employed were recruited locally by the Regional and District Offices. The employees hired by the Employment Section were assigned as follows:

Deputy Minister's Branch.....	75
Personnel Branch.....	16
Services Branch.....	146
Planning and Design Branch.....	213
Municipal Roads Branch.....	11
Chief Engineer's Branch.....	95
Financial Comptroller's Branch.....	106
TOTAL.....	662

The employment interviewers of the Personnel Branch conducted 4,100 personal interviews during the year. In addition to employment interviews the Employment Section conducted a number of counselling interviews, which in many instances were instrumental in relocating employees who expressed a desire to be transferred to different positions.

The Employment Section conducted an active recruiting program late in 1958 to obtain civil engineering graduates. Personal letters were sent to every 1959 Ontario civil engineering graduate outlining the advantages of a career in highway engineering. Recruiting pamphlets, specially designed for civil engineers, were also mailed to every Ontario graduate and to every University Placement Officer in Canada. Advertisements were placed in the university student publications emphasizing engineering career opportunities with the Department of Highways. Interviews were conducted at the campuses of Toronto and Queen's Universities and the response to the recruiting program for engineers was highly satisfactory in that 89 engineers were interviewed. All of the requirements for 1959 civil engineering graduates were completed.

During the year the Employment Section continued to advertise vacancies by means of competition circulars. A total of 20 competitions were held and the increased use of this means of recruitment was conducive to improved morale within the Department.

With the exception of a few classifications, no difficulty was encountered in meeting the requests for staff during the fiscal year as the number of applicants seeking employment with the Department exceeded the number of openings.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

At the end of the fiscal year the Department's work force was 12,959, and was distributed as follows. The figures for the fiscal years 1956-57 and 1957-58 are also shown for purposes of comparison.

	1958-59	1957-58	1956-57
Minister's and Deputy Minister's Branch.....	240	190	138
Financial Comptroller's Branch.....	277	238	202
Services Branch.....	1,250	1,156	1,046
Planning and Design Branch.....	1,039	927	755
Operations Branch.....	9,994	9,127	8,327
Personnel Branch.....	65	52	41
Municipal Roads Branch.....	94	75	67
TOTAL.....	12,959	11,765	10,981

The total work force of 12,959 includes all salaried and hourly-rated employees and was grouped as follows:

	1958-59	1957-58	1956-57
Permanent and Temporary Staff.....	4,185	3,499	1,936
Casual Staff.....	6,457	5,398	6,459
Labour — Established.....	2,317	322	387
Unestablished.....	.....	2,546	2,199
TOTAL.....	12,959	11,765	10,981

It should be noted that on November 1, 1958, all labourers in the Department became eligible for the accumulation of sick leave credits. Prior to this date, only established labourers were entitled to these credits.

During the year 17,247 personnel transactions were carried out by the Personnel Branch. These were as follows:

New Appointments.....	4,814
Terminations.....	3,620
Salary and Other Record Changes.....	8,813
TOTAL.....	17,247

During the year, the following appointments to staff were made:

Casual to Permanent.....	655
Temporary to Permanent.....	255
Casual to Temporary.....	16
TOTAL.....	926

Organization and Classification Section

This Section is responsible for administering and approving, or recommending to the Civil Service Commission for approval, changes in wages, salaries and classifications and for assisting in the development of organizational plans for the various Branches, Districts and Sections in the Department; for the preparation of job descriptions and manuals, and for rendering advice and assistance to the supervisory staff of the Department in the fields of organizational principles and practices, employee evaluation and a wide variety of other related personnel matters.

During the year a number of organizational studies were made or continued. As a result of studies in the Planning and Design Branch and in the Services Branch several recommendations for the establishment of new classes, or for the revision of existing classes, were made to the Civil Service Commission and received approval in due course. Organizational studies were also commenced in the Municipal Roads Branch. Similar action was taken in connection with the creation of an Electronic Computation Section, which necessitated the establishment of several new classifications.

Members of the Section staff participated in the work of several committees. As a result of this work, proposals were made to the Civil Service Commission to establish a new class series to cover the inspection function performed in the Department, and a revised organization and classification proposal was also made in connection with the Accounts Sections in all Districts.

During the year, the responsibility for the processing of appointments to Permanent and Temporary Staffs was transferred from the Records Section to the Organization and Classification Section. This step was considered desirable, due to the close relationship between the processing of appointments and the classification work performed by the Section. The change has been beneficial and the processing of appointments has proceeded smoothly since the change.

The annual merit salary increases were once again incorporated in the April salary cheques, thanks to the revised procedures adopted by both the Civil Service Commission and the Department.

On April 1, 1958, Mr. L. H. Williams was transferred from the Fort William District of the Operations Branch to the Personnel Branch as Regional Personnel Representative. Mr. Williams' responsibilities are to act as the representative of the Personnel Branch and to give assistance on all personnel matters to the district staffs at the Fort William, Kenora and Cochrane Districts. Other personnel representatives will be appointed to the remaining four regions as soon as qualified personnel staff has been trained.

Training Section

The purpose of this Section is to establish and maintain training courses as required for the more efficient operation of the Department.

The Department's training program was very successful during the year in helping to ameliorate the shortage of trained personnel in the Department. The training program which was initiated to meet specific needs in the construction field has increased in coverage and courses are now conducted by every branch of the Department. The following figures indicate the magnitude of the Department's Training Program during the period from April 1, 1958, to March 31, 1959.

Branch	Number of Courses Held	Number of Candidates Taking Courses
Services.....	44	585
Financial Comptroller.....	2	46
Operations.....	16	501
Planning and Design.....	10	144
TOTAL.....	72	1,276

A total of 1,276 Departmental employees received training in Departmental courses during the year. Some of the courses that were held during the year were as follows: Estimator Group 1 Course, Project Design Supervisor's Course, Rodman to Junior Instrumentman Courses, Junior Instrumentman to Instrumentman Courses, Instrumentman to Senior Instrumentman Courses, Asphalt Inspector's Course, Concrete Inspector's Course, O.L.S. Apprenticeship Courses, District Stockkeeper's Course, Property Appraiser's Course, Mechanic Groups 1 and 2 Courses, Municipal Road Auditor's Course, Senior Accountant's Course.

The Department's training program has been successful in helping to overcome the shortage of trained staff but has also had other far-reaching and beneficial effects that can be considered to be more important than the actual training of the Department's employees. The most important effect accomplished to date has been the over-all improvement of morale since the inception of the training program. Another "By-product" of the training courses has been an improvement in the quality of work performed and a decrease in grievances and complaints from the Department's employees.

Departmental Councils

During the fiscal year the Personnel Branch continued its interest in the Council system. The Departmental Council convened for 14 meetings during the period from April 1, 1958 to March 31, 1959. The success of the Departmental Council is indicated by the following recommendations of the Council which were brought into effect during the year — the eight hour work day, lump sum payment of 4 per cent vacation pay, sick leave credits for hourly-rated employees, issue of Department of Highways Training Course Certificates, improved circulation of circulars and competition letters, settlement of a number of employee grievances.



Frederick W. Gardiner Expressway, Toronto. This section, approaching the Canadian National Exhibition, was officially opened in 1958.



Lanark County Road 3A, a stabilized gravel road near Perth.

MUNICIPAL ROADS BRANCH

J. V. LUDGATE, P.Eng., *Municipal Engineer*

The Municipal Roads Branch administers the parts of The Highway Improvement Act pertaining to roads under jurisdiction of the municipalities and roads in unincorporated territory other than King's Highways and Secondary Highways. For purposes of the Branch, the Province is divided into 20 Districts with an engineer in charge of each. These engineers, with their staffs, act in direct liaison with the municipalities to provide engineering guidance and to carry out required inspection of municipal road and bridge undertakings.

Road and street expenditures at the municipal level during 1958 continued to show the upward trend which has been quite pronounced for a number of years past. Total expenditures by all classes of municipalities amounted to approximately \$108,620,000 as compared to \$101,871,000 during the previous year.

The following table indicates the trend in municipal road expenditures and Departmental aid over the past six years.

Expansion of Departmental Aid to Municipalities (in \$1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1953	\$ 54,452	\$27,190	\$1,759	\$28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952

Distribution of Municipal Aid

The road expenditures in organized municipalities were governed by appropriation by-laws, approved by the Minister. The provision of funds was based upon tax levy plus the estimated statutory subsidy. A summary of mileages, approved by-law totals, approved expenditures and departmental subsidies applying to each type of municipal organization is given below:

Distribution of Expenditures and Subsidies in 1958

Corporation Status	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metropolitan	291.11	\$ 17,394,100.00	\$ 15,659,889.53	\$ 7,829,944.77
County*	9,349.45	30,057,830.00	27,044,966.20	14,603,895.24
Township†	51,117.68	39,356,722.00	35,683,958.31	19,867,541.32
Urban	8,163.12	34,134,519.00	30,231,140.62	11,723,534.51
TOTALS	68,851.36	\$120,943,171.00	\$108,619,954.66	\$ 54,024,915.84

* Includes suburban road commissions.

† Includes Indian Reserves and Improvement Districts.



Essex County bridge on the well-travelled approach to Point Pelee.

Aid toward roads in unincorporated territory and on development roads was continued during the year. Details of these items appear elsewhere in this report.

METROPOLITAN TORONTO

Expenditures on roads under the jurisdiction of the Council of Metropolitan Toronto are subsidized under authority of The Municipality of Metropolitan Toronto Act. The following is a breakdown of expenditures during 1958:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$10,131,934.74	\$1,656,874.92	\$11,788,809.66
Bridges and culverts.....	3,131,642.07	35,606.97	3,167,249.04
Winter control.....		703,830.83	703,830.83
TOTAL APPROVED EXPENDITURE.....	\$13,263,576.81	\$2,396,312.72	\$15,659,889.53

Notable features of the year's work included completion of 2.5 miles of the Frederick G. Gardiner Expressway, 16 major structures, widening of 3 miles and resurfacing of 19 miles of road, and improvement of 27 intersections.

COUNTY ROADS

(Part IV, The Highway Improvement Act, 1957)

During 1958, counties expended on their road systems a total of over \$27,000,000 representing an increase of nearly 12 per cent over 1957. Details of expenditures and subsidy listed by counties is shown in Appendix No. 7 of this report. The following is a classified summary of total expenditures (including expenditures on Suburban Roads):

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$14,601,123.58	\$7,158,458.39	\$21,759,581.97
Bridges and culverts.....	3,283,225.99	321,481.14	3,604,707.13
Winter control.....		1,680,677.10	1,680,677.10
TOTAL APPROVED EXPENDITURE.....	\$17,884,349.57	\$9,160,616.63	\$27,044,966.20

Based on county engineers' reports a summary of work performed during the year is listed below.

Construction Items:

1. New or rebuilt gravel or stone surfaces.....	422.4 miles
Low cost bituminous surfaces.....	271.1 "
Pavements.....	185.7 "
COMPLETED ROAD CONSTRUCTION.....	879.2 miles
Graded to standard cross-section.....	367.6 "
2. Bridges (10-foot span and over); Concrete, 72; Steel, 14; Timber 2; Total 88.	
Culverts (under 10-foot span); Concrete, 105; Metal Arch, 27; Wood, 5; Total, 137.	
Culvert pipes installed.....	3,438

Maintenance Items:

1. Roadside ditching.....	202.8 miles
Bituminous surface treatment.....	1,015.0 "
Dust laying — oil.....	1,469.4 "
Dust laying — calcium chloride.....	2,632.5 "
Clay gravel stabilization.....	45.5 "
Resurfacing — Pit-run gravel.....	92,228 cu. yds.
Crushed gravel.....	596,742 "
Crushed stone.....	167,416 tons
2. Winter control — Snow removal.....	9,309.5 miles
Snow fence.....	1,224.1 "
3. Weed and brush control — by spraying.....	6,517 miles
by cutting.....	6,853 "
4. Bridges repaired.....	134
Culverts repaired.....	618

Details of county road mileages, types of surfaces, expenditures and subsidies will be found in appendices 5, 6, 7 and 11 of this report.



Grading development road west of Shelburne, Owen Sound District.

COUNTY SUBURBAN ROADS

(Part V, The Highway Improvement Act, 1957)

Thirty-three suburban road commissions have to do with a specified mileage of roads leading to and from the cities and separated towns. Particulars concerning their 1958 operations are summarized below:

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	35.00	\$ 215,152.72	\$ 125,205.60
Carleton.....	Ottawa.....	107.40	600,547.12	333,839.45
Elgin.....	St. Thomas.....	30.00	57,690.69	31,050.69
Essex.....	Riverside.....	1.00	656.84	328.42
	Windsor.....	44.00	296,057.24	148,537.02
Frontenac.....	Kingston.....	43.60	104,669.36	52,802.03
Grey.....	Owen Sound.....	34.70	36,072.73	18,125.54
Hastings.....	Belleville.....	6.20	28,392.38	14,363.60
Kent.....	Chatham.....	24.35	66,188.44	33,094.22
Lambton.....	Sarnia.....	22.06	168,289.63	122,879.23
Lanark.....	Smiths Falls.....	6.00	29,487.72	14,770.23
Leeds and Grenville.....	Brockville.....	20.70	35,520.25	18,227.95
	Gananoque.....	8.80	11,772.42	6,007.41
	Prescott.....	1.40	10,939.65	5,534.69
	Smiths Falls.....	5.30	9,452.54	4,788.37
Lincoln.....	St. Catharines.....	23.55	135,211.64	68,582.21
Middlesex.....	London.....	64.25	433,489.14	218,461.50
Northumberland and Durham.....	Trenton.....	12.75	22,810.31	11,968.08
Ontario.....	Oshawa.....	21.70	124,253.09	77,194.02
Oxford.....	Ingersoll.....	4.29	3,902.92	1,951.46
	Woodstock.....	11.05	282,101.81	160,135.62
Perth.....	St. Mary's.....	5.00	11,664.93	5,851.44
	Stratford.....	18.55	44,793.94	24,338.21
Peterborough.....	Peterborough.....	70.00	134,095.93	67,352.74
Stormont, Dundas and Glengarry.....	Cornwall.....	61.00	159,912.28	82,762.15
Waterloo.....	Galt.....	38.26	109,153.21	58,087.97
	Kitchener.....	62.67	320,506.23	182,825.90
	Waterloo.....	14.80	61,257.94	32,506.84
Welland.....	Niagara Falls.....	18.50	93,973.29	47,203.34
	Welland.....	15.00	33,522.98	16,989.31
Wellington.....	Guelph.....	38.50	58,999.13	29,983.48
Wentworth.....	Hamilton.....	120.51	678,514.68	370,218.63
York.....	Toronto and York.....	182.86	1,790,235.76	945,181.48
TOTALS.....	.....	1,170.75	\$6,169,288.94	\$3,331,148.83

INCORPORATED TOWNSHIPS

(Part VI, The Highway Improvement Act, 1957)

The upward trend in township road construction which has been noted since 1955 continued during 1958. This coupled with increased cost of winter control accounted for a total expenditure of \$2,500,000 in excess of that for 1957. Bridge and culvert expenditures showed a slight decrease from the previous year.

A chronological summary of expenditures and subsidies at the township level is shown in appendix 8 and a tabulation of township road mileages and surface types in appendix 11.

The following table gives a classified breakdown of total expenditures:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$13,588,276.83	\$14,106,356.06	\$27,694,632.89
Bridges and culverts.....	3,646,689.13	635,854.39	4,282,543.52
Winter control.....		3,706,781.90	3,706,781.90
TOTAL APPROVED EXPENDITURE.....	\$17,234,965.96	\$18,448,992.35	\$35,683,958.31

Major items of road improvement carried out by the townships during the year were as follows:

Construction Items:

1. New or rebuilt gravel and stone surfaces.....	2,899.8 miles
Low-cost bituminous surfaces.....	250.1 "
Pavements.....	140.2 "

COMPLETED ROAD CONSTRUCTION.....

Graded to standard cross-section.....	3,290.1 miles
2. Bridges (10-foot span and over); Concrete, 219; Steel, 41; Timber, 53; Total, 313.	2,899.7 "
Culverts (under 10-foot span); Concrete, 402; Metal Arch, 226; Timber, 188; Total, 816.	
Culvert pipes installed.....	6,155

Maintenance Items:

1. Roadside ditching.....	2,030.2 miles
Bituminous surface treatment.....	326.7 "
Dust laying — oil.....	796.4 "
Dust laying — calcium chloride.....	4,271.9 "
Clay gravel stabilization.....	159.5 "
Resurfacing — Pit-run gravel.....	1,257,606 cu. yds.
Crushed gravel.....	2,269,093 "
Crushed stone.....	561,719 tons
2. Winter control — Snow plowing.....	42,112 miles
Snow fence.....	2,956 "
3. Weed and brush control — by spraying.....	14,998 miles
by cutting.....	15,305 "
4. Bridges repaired.....	833
Culverts repaired.....	4,763

CITIES, TOWNS AND VILLAGES

(Part VII, The Highway Improvement Act, 1957)

The most pronounced increase in spending during 1958 took place at the urban level. Construction, maintenance and total expenditures showed a rise of 22 per cent, 14 per cent and 18 per cent respectively as compared with figures for 1957. The distribution of total expenditure is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$13,343,218.26	\$ 9,899,359.76	\$23,242,578.02
Bridges and culverts.....	2,014,435.25	322,828.23	2,337,263.48
Winter control.....		4,651,299.12	4,651,299.12
TOTAL APPROVED EXPENDITURE.....	\$15,357,653.51	\$14,873,487.11	\$30,231,140.62

Appendix 9 gives a chronological summary of expenditures and subsidies for urban municipalities since 1947. Appendix 10 shows mileages and road surface types and appendix 12 shows a breakdown of urban expenditures by districts.

DEVELOPMENT ROADS

(Part VIII, The Highway Improvement Act, 1957)

During the fiscal year \$6,927,148.02 was expended on 179 projects involving 1,014.54 miles of road currently under Department-Municipality agreements for construction or improvement.

Of these, 51 projects (238.75 miles) were completed and their designations revoked. New designations numbered 41 and 5 former Development Road projects were redesignated to effect further improvements. A total of 129 projects remained unfinished and were carried forward to the 1959 program.

Of the above, \$4,393,001.50 was expended upon 48 county road projects. This supplement to regular by-law funds should shorten considerably the time needed for the county organizations to catch up on their back-log of construction needs. The locations, mileages and expenditures for projects in process are shown in appendix 14.

ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

(Part IX, The Highway Improvement Act, 1957)

In the territorial districts of the Province there are some 4,690 miles of public roads situated in unincorporated townships. Where there is sufficient population, landholders are encouraged to form Statute Labour Boards. The Department extends aid in such areas based on the extent of the expenditures made or statute labour performed. Where statute labour organization is not feasible, similar aid is extended to groups willing to make contributions or perform voluntary labour. The summary of expenditures given below indicates that the Department provided assistance to the extent of 71 per cent of all expenditures on roads in this category.

SUMMARY OF UNINCORPORATED TOWNSHIPS EXPENDITURES IN THE FISCAL YEAR 1958-59

MUNICIPAL DISTRICT	Value of Statute Labour or other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10 — Nipissing.....	\$ 3,068.84	\$ 8,285.31	\$ 11,354.15	73%
11 — Muskoka.....	11,612.53	11,138.64	22,751.17	49
12 — Parry Sound.....	59,452.46	198,529.98	257,982.44	77
13 — Nipissing.....	45,316.36	110,612.63	155,928.99	71
14 — Temiskaming and Cochrane South.....	51,058.58	142,941.18	193,999.76	74
16 — Cochrane North.....	55,184.33	142,848.28	198,032.61	72
17 — Sudbury.....	52,426.18	73,860.51	126,286.69	60
18 — Algoma.....	59,608.24	154,552.76	214,161.00	72
19 — Thunder Bay.....	48,732.25	106,262.35	154,994.60	69
20 — Kenora and Rainy River..	54,739.09	138,393.99	193,133.08	72
Adjustment District No. 17 accounts receivable.....	\$441,198.86 —1,837.14	\$1,087,425.63 —1,837.14	\$1,528,624.49	71%
TOTALS.....	\$439,361.72	\$1,089,262.77	\$1,528,624.49	

The following is a summary of work performed through statute labour, voluntary contributions and departmental aid:

Construction Items:

Clearing and grubbing.....	45.9 miles
Grade construction.....	81.9 "
Gravel and stone surfacing.....	174.2 "
Bridges (10-foot span and over); Timber, 34; Steel, 1; Total, 35.	
Culverts (under 10-foot span); Timber, 189; Metal Arch, 5; Total 194.	
Culvert pipes installed.....	1,015

Maintenance Items:

1. Roadside ditching.....	331.5 miles
Brush and weed cutting.....	633.0 "
2. Winter control — Snow plowing.....	1,955 miles
Snow fence.....	201 "
Pit-run gravel applied.....	338,445 cu. yds.
Crushed gravel and stone applied.....	6,243 "
3. Bridges repaired.....	200
Culverts repaired.....	1,160

SIDEWALK CONSTRUCTION, 1958-59

(Under Part X, Section 94, The Highway Improvement Act, 1957)

Essa Township, Village of Angus (County Road No. 10).....	\$ 524.25
Ellice Township, Hamlet of Wartburg.....	287.65
Gainsborough Township, Village of Wellandport (County Road No. 17).....	1,073.10
Hilbert Township, Village of Dublin (County Road No. 10).....	482.00
Sandwich Township, Virginia Park to Everts Ave. (County Road No. 24).....	1,449.87
Colchester Township, Village of McGregor (County Road No. 5).....	452.96
Pickering Township, Village of Claremont (County Road No. 1).....	269.10
Ancaster Township, Golf Club, Southcote and Mohawk Rds. (County Road Nos. 15 and 15A).....	4,763.53
Clarence Township, Police Villages of Clarence Creek and Bourget and Hamlet of Hammond (County Rd. Nos. 8, 2 and 5).....	449.60
Maryborough Township, Hamlet of Rothsay (County Road Nos. 58 and 52).....	363.90
TOTAL	\$10,115.96



Creosote timber bridge on Development Road 335, Kenora District.

SUMMARY OF MUNICIPAL ROAD IMPROVEMENTS—1958

Each year municipalities receiving aid under The Highway Improvement Act are required to submit reports showing the amount of work performed during the year. Based on these reports as reviewed by the District Municipal Engineer, the following is a resume showing major items of improvement carried out by counties and townships:

DISTRICT 1—(3 counties, 39 townships, 36 urban municipalities)

Essex—Construction: 5 miles hot mix, 4.5 miles mulch, 12 miles stabilized base, 2 steel bridges, 350 feet guide rail.

Maintenance: 9 miles ditching, 25 miles bituminous patching, 91 miles calcium dust laying, 2 miles snow fence, 271 miles weed spraying, 5 bridges, 15 culverts repaired.

Purchases: 5 trucks, 2 power graders, 1 conveyor, 5 acres of land.

Kent—Construction: 25.75 miles hot mix, 20 miles stabilized base, 47,000 lin. ft. underdrainage, 1 steel beam and girder bridge (Bothwell Bridge), 2 concrete culverts, 45 pipe culverts.

Maintenance: 3 miles bituminous patching, 5 miles calcium dust laying, 160 miles weed spraying, 360 miles weed and brush cutting, 8,000 cu. yds. pit-run gravel, 200 tons crushed stone, 3 bridges and 8 culverts repaired.

Purchases: 1 tractor and mower, 3.165 acres of land.

Lambton—Construction: 16.3 miles hot mix, 15.3 miles of new grade using 73,530 cu. yds. pit run gravel, 1,000 tons crushed stone, 3,800 lin. ft. guide rail, 185 pipe culverts, 2 concrete bridges and 5 concrete culverts.

Maintenance: 18 miles ditching, 109 miles dust laying, 5 miles snow fence, 220 miles weed spraying, 220 miles weed and brush cutting, 6,560 cu. yds. pit-run gravel, 4,200 tons crushed stone, 4 bridges and 78 culverts repaired.

Purchases: 1 crane, 1 power grader, 1 station wagon, 10.5 acres of land.

Townships—Construction: 27.4 miles hot mix, 28.7 miles mulch, 5.30 miles of stabilized base, 10.8 miles of new grade using 63,017 cu. yds. pit run, 11,128 cu. yds. crushed gravel, 67,017 tons crushed stone, 15,650 lin. ft. underdrainage, 3,906 lin. ft. guide rail, 33 bridges, 25 culverts and 835 pipe culverts.

Maintenance: 32.10 miles bituminous surface treatment, 49.50 miles oil and 355 miles calcium dust laying, 2,215 miles weed spraying, 1,576 miles weed and brush cutting, 131,703 cu. yds. pit run, 84,647 cu. yds. crushed gravel, 88,851 tons crushed stone, 51 bridges and 240 culverts repaired.

Purchases: 6 power graders, 9 trucks, 4 tractors, 1 sweeper, 1 chain saw, 1 snowplough, 1 hand-type spray pump, 1 four-door sedan, 9.67 acres of land.

DISTRICT 2—(4 counties, 42 townships, 28 urban municipalities)

Elgin—Construction: 9 miles mulch pavements, 60,000 cu. yds. pit gravel on new grades, 2 concrete bridges, 2,200 feet guide rails.

Maintenance: 31 miles bituminous surface treatment, 41 miles clay stabilizer, 275 miles weeds cut, 8 bridges and 20 culverts repaired.

Purchases: 30-ton scale, 150 h.p. grader chain saw, 1 automobile, 2 pick-up trucks, 1 concrete vibrator.

Middlesex—Construction: 23 miles mulch pavements, 124,470 cu. yds. pit-run gravel and 28,725 cu. yds. crushed gravel used on new grades, 5.5 miles macadam and asphalt concrete pavement, 9 concrete culverts, 2 steel and 3 concrete bridges.

Maintenance: 39.4 miles of bituminous surface treatment, 805 tons of calcium dust laying, 498 miles weed cutting, 37,210 cu. yds. gravel regrading, 5 bridges repaired.

Purchases: 2 dump trucks, 1 snowplough, 1 post hole auger.

Norfolk—Construction: 4.4 miles mulch pavement, 1 mile sand stabilization, 5 concrete bridges, 80,328 cu. yds. crushed gravel, 18,410 tons crushed stone, 7 miles new grading.

Maintenance: 220 miles weed spraying, 245 miles weed cutting, 7,210 tons crushed gravel on regrading, 6 bridges and 10 culverts repaired.

Purchases: 2 sand spreaders, 2 5-ton dump trucks, 1 bulldozer, $\frac{3}{4}$ yd. shovel and dragline, truck chassis and cab with semitrailer, Hi Way marker, station wagon, pick-up truck, foreman's car, 18.2 acres of land.

Oxford—Construction: 8.1 miles concrete pavement, 2.4 miles bituminous pavement, 33,969 cu. yds. pit gravel, 22,953 cu. yds. crushed gravel, 3 concrete culverts, 4 concrete bridges and 95 pipe culverts.

Maintenance: 6,585 tons bituminous on 31.6 miles of hard top patching on county and suburban roads, 200.4 miles weed spraying and 200.4 miles weed cutting, 16,070 cu. yds. crushed gravel, 5,319 cu. yds. crushed stone on regrading, 2 bridges and 17 culverts repaired.

Purchases: Equipment, nil; 29 parcels of land, 20,841 acres.

Townships—Construction: 21 miles low-cost bituminous pavement, 20.2 miles asphaltic concrete, 163,924 cu. yds. pit-run gravel, 53,606 cu. yds. crushed gravel, 9,785 cu. yds. crushed stone applied on new grades, 41 bridges and 46 culverts were built.

Maintenance: 15.5 bituminous surface treatment, 52 miles oil and 503 miles dust layer, 20 miles clay stabilizer, 2,424 miles weed spray and 2,231 miles weed cut, 44,083 cu. yds. pit-run gravel, 297,546 cu. yds. crushed gravel, 28,390 cu. yds. crushed stone, regrading 48 bridges and 235 culverts repaired.

Purchases: 3 tractor mowers, 6 graders, 21 trucks, 3 cars, 3 spreaders, 4 snowploughs, 3 bulldozers, 1 hoist, 1 tractor.

DISTRICT 3—(4 counties, 44 townships, 32 urban municipalities)

Huron—Construction: 6 concrete bridges, 3 concrete culverts, 100 pipe culverts, 14 miles of grading, 250,000 cu. yds. of crushed weed gravel, 7,000 cu. yds. of pit-run gravel for road surfacing, 6 miles of light bituminous and 2 miles of asphalt.

Maintenance: 6 miles bituminous surface treatment, 200 miles calcium dust laying, 50 miles of weed spraying, 100,000 cu. yds. of crushed gravel resurfacing, and 2 bridges repaired.

Purchases: 70 acres of land, 1 motor grader, 4 pick-up trucks, and 1 crawler tractor.

Perth—Construction: 3 concrete bridges, 1 metal arch and 2 concrete culverts, 35 pipe culverts, 13 miles of grading, 200 feet of guide rail, 13.4 miles of stabilizing base, 612 rods of fencing, 70,000 cu. yds. of crushed gravel, 6.2 miles of light bituminous, and 11.3 miles of mix M.

Maintenance: 6 miles of roadside ditching, 9.4 miles bituminous surface treatment, resurfacing with 39,900 cu. yds. of crushed gravel, 6 bridges and 11 culverts repaired.

Purchases: 2 H.D. dump trucks, and 1 pick-up truck.

Waterloo—Construction: 3 concrete bridges, 5 concrete culverts, 17 pipe culverts, 800 feet of guide rail, 15 miles of grading, 29,397 cu. yds. of pit-run gravel, 390,114 cu. yds. of crushed gravel, 7.4 miles of light bituminous, 1.9 miles of mix M.

Maintenance: 76 miles of calcium dust laying, 226 miles of weed spraying and weed cutting, 2,000 cu. yds. of crushed gravel and 1,945 cu. yds. of crushed stone.

Purchases: 1 motor grader, 1 3-ton truck, 1 ½-ton pick-up, 1 ½-ton panel, 2 tractors and loaders, and 3 weed sprayers.

Wellington—Construction: 4 concrete culverts, 32 pipe culverts, 4 miles of grading, 92,000 cu. yds. of crushed gravel, 3 miles light bituminous, 3.5 miles asphalt.

Maintenance: 25 miles roadside ditching, 44 miles bituminous surface treatment, 220 miles of calcium dust laying, weed spraying and weed cutting, 101,000 cu. yds. crushed gravel on road resurfacing, 9 bridges and 19 culverts repaired.

Purchases: 1 ½-ton pick-up.

Townships—Construction: clearing and grubbing 42.3 miles, 180 miles of grading, 26 concrete bridges, 16 M.A. culverts, 43 concrete culverts, 406 pipe culverts, 1,934 feet of guide rail, 11,880 feet of under drain, 11 miles of stabilizing base, 93,835 cu. yds. of pit run and 91,999 cu. yds. of crushed gravel, 6,451 cu. yds. crushed stone, 3.6 miles of light bituminous, and 5.7 miles of Mix M.

Maintenance: 45 miles of roadside ditching, 1,017 miles of calcium dust laying, 2055 miles of weed spraying, resurfacing with 6,900 cu. yds. pit run and 457,700 cu. yds. of crushed gravel, 28,500 cu. yds. of crushed stone, 36 bridges and 188 culverts repaired.

Purchases: 5 motor graders, 5 snowploughs and wings, 2 H.D. trucks, 5 ½-ton pick-ups, 2 tractors, 3 mowers, and 10 acres of land.

DISTRICT 4—(5 counties, 39 townships, 2 Indian reserves, 25 urban municipalities)

Brant—Construction: 32 miles bituminous surfacing, 4 concrete culverts, 771 culvert pipes installed.

Maintenance: 8.8 miles surface treatment, 17 miles dust laying, 126 miles of weeds cut, 1 bridge repaired, 5,000 cu. yds. crushed gravel, 3,000 cu. yds. crushed stone.

Purchases: 115 h.p. grader, 1 automobile.

Haldimand—Construction: 7 miles bituminous surfacing, 5 miles new grades, 1 concrete culvert, 9,000 cu. yds. pit gravel.

Maintenance: 8.8 miles surface treatment, 12 miles dust laying, 165 snow clearing, 165 miles weeds sprayed, 3,300 cu. yds. crushed stone, 2 bridges repaired.

Purchases: 1 grader, 3 dump trucks, $\frac{1}{2}$ -ton truck.

Lincoln—Construction: 15 miles bituminous surfacing, 2 concrete bridges, 4 concrete culverts and 1 metal arch culvert, 2 miles asphalt concrete, 70 culvert pipes.

Maintenance: 23 miles surface treatment, 195 miles weeds cut, 195 miles snow clearing, 2 bridges repaired.

Purchases: $\frac{1}{2}$ -ton pick-up, 2 3-ton dump trucks.

Welland—Construction: 5.4 miles bituminous surfacing, 1 steel bridge, 1 concrete bridge, 1 metal arch culvert, 8 miles asphalt concrete, 215 culvert pipes.

Maintenance: 303 miles bituminous surfacing, 3,348 tons crushed stone, 165 miles snow clearing, 165 miles weeds cut, 1 bridge, 4 culverts, repaired.

Purchases: Truck chassis, pick-up truck, tractor mower, posthole digger.

Wentworth—Construction: 50 miles bituminous surfacing, 2 concrete bridges, 7 miles new grades, 10,200 roads fencing.

Maintenance: 70 miles surface treatment, 184 miles snow clearing, 184 miles weeds cut, 6,000 tons crushed stone.

Purchases: 1 gradall, 1 sedan, 2 steam Jennies, sand spreader.

Townships—Construction: 21 miles bituminous surfacing, 1.8 miles asphalt concrete, 6 concrete bridges, 5 metal arch culverts, 15 concrete culverts, 10.2 miles pit-run gravel.

Maintenance: 138.7 miles surface treatment, dust laying (46.5 miles oil — 117 miles calcium), 1,082 miles snow clearing, 11 bridges, 65 culverts repaired.

Purchases: 4 5-ton dump trucks, 2 station wagons, 2 graders, plough and wing, 2 sand spreaders, 2 pick-up trucks, motor grader, paving breaker, gully cleaner, welder, tractor mower 35 h.p. loader, 1 chain saw.

DISTRICT 5—(3 counties, 38 townships, 2 Indian reserves, 29 urban municipalities)

Bruce—Construction: 8 miles bituminous surfacing, 13.7 miles mixed asphalt concrete, 6.5 miles new grade using 76,763 pit-run gravel, 8 concrete, 1 steel bridges, 812 feet underdrainage, 1 culvert and 34 culvert pipe.

Maintenance: 27.7 miles bituminous surface treatment, 155 miles calcium dust laying, 305 miles snow clearing, 80 miles weed spraying and 60 miles cut, 21,660 cu. yds. crushed gravel, 5 bridges repaired, 80 miles of snow fencing.

Purchases: 1 compressor, 1 tractor mower, 1 loader, 1 grader and plough, 1 truck and plough, 1 sheeps foot, 1 wobbly wheel, 1 D7 tractor and scraper, 57 acres land.

Dufferin—Construction: 8 acres clearing and grubbing, 4.8 miles new grade using 7,000 cu. yds. of crushed gravel, 1 concrete bridge, 300 feet guide rail, 32 culvert pipes, 6,900 rods fencing.

Maintenance: 40 miles calcium dust laying, 165 snow clearing, 80 miles weeds spray and 170 miles cut, 43,000 cu. yds. crushed gravel resurfacing, 1 bridge and 12 culverts repaired.

Purchases: 1 spray tank, $\frac{1}{2}$ -ton truck, 1 tractor mower, 1 chain saw.

Grey—Construction: 8.2 miles new grade using 47,550 cu. yds. pit gravel, 4,350 cu. yds. crushed gravel, 4 steel bridges, 102 culvert pipes.

Maintenance: 11.5 miles bituminous surface treatment, 33 miles oil and 175 miles calcium dust laying, 367 miles snow clearing, 122 miles weed spray and 146 cut, 7.8 miles road side ditching, 81,895 tons crushed gravel and 1,558 crushed stone used resurfacing, 3 bridges and 25 culverts repaired.

Purchases: 1 motor grader, 8.5 acres gravel pit, 8.2 acres land.

Townships—Construction: 4 miles bituminous surfacing, 153 miles new grade using 120,701 cu. yds. pit run and 135,721 cu. yds. crushed gravel, also 3,935 cu. yds. crushed stone, 5.7 miles mulch base, 29 metal arch, 32 concrete culverts, 2 wood, 3 steel and 17 concrete bridges, 745 culvert pipes.

Maintenance: 133 miles ditching, .8 miles bituminous treatment, 295.6 miles calcium dust laying, 228.3 miles snow fencing, 3,603 miles snow clearing, 1,289 miles weed spray and 1,206 miles cut, 208,721 cu. yds. pit and 339,030 cu. yds. of crushed gravel and 980 cu. yds. crushed stone used in resurfacing, 44 bridges and 220 culverts repaired.

Purchases: 5 graders, 4 snow ploughs and wings, 1 tractor mower, 2 dozer blades, 1 spray tank, $\frac{1}{2}$ -ton pick-up, 1 chain saw, 11.2 acres land.

DISTRICT 6—(4 counties, 31 townships, 1 Indian reserve, 34 urban municipalities)

Halton—Construction: 1 concrete bridge, 36 pipe culverts, 800 lin. ft. of guide rail, 1,800 lin. ft. of underdrain, 86,500 cu. yds. granular base on 10.5 miles, 26,200 cu. yds. crushed gravel on 12.25 miles, 6.75 miles of light bituminous surface, 12.50 miles of asphaltic concrete pavement.

Maintenance: 5 miles of roadside ditching, 15.5 miles bituminous surface treatment, 70 miles of calcium dust layer, 30,00 cu. yds. crushed gravel, 10 culverts repaired.

Equipment Purchases: 1 $\frac{1}{2}$ -ton pick-up truck, 1 F.W.D. dump truck, 1 600-gallon steel tank.

Peel—Construction: 44 acres of clearing and grubbing, 3.6 miles of grading, 28 culverts, 4 concrete bridges, 228 pipe culverts, 17,500 square yards sodding, 11,065 lin. ft. of guard rail, 5,000 rods fencing, 11,000 cu. yds. granular base on 3.6 miles, 40,000 cu. yds. crushed gravel on 12.0 miles, 10.69 miles asphaltic concrete pavement.

Maintenance: 3.5 miles roadside ditching, 22.5 miles bituminous surface treatment, 24.4 miles oil dustlayer, 29.55 miles calcium dust layer, 11,000 cu. yds. crushed gravel.

Equipment Purchases: 1 4-wheel drive front end loader, 1 one-way snowplough, 1 1959 Chevrolet 4-door passenger car, 1 2-inch water pump.

Simcoe—Construction: 6 acres clearing and grubbing, 13.25 miles of grading, 46 pipe culverts, 2,150 lin. ft. of guide rail, 1,824 rods of fencing, 53,913 cu. yds. granular material on 9.8 miles of road, 29,908 cu. yds. crushed gravel on 9.15 miles of road, 4.1 miles asphaltic concrete pavement.

Maintenance: 0.5 miles roadside ditching, 4.5 miles bituminous surface treatment, 60.8 miles oil dust layer, 126 miles calcium dust layer, 10,467 cu. yds. crushed gravel, 771 cu. yds. crushed stone, 1 bridge repaired, 27 culverts repaired.

Equipment Purchases: 1 $\frac{1}{2}$ -ton pick-up truck, 1 5-ton dump truck, 1 1-ton pick-up truck, 1 caterpillar power grader, 1 crawler tractor loader, 1 sand spreader.

Land Purchase: 23.75 acres.

York—Construction: 10.34 acres, clearing and grubbing, 17.58 miles grading, 2 concrete bridges, 11 culverts, 412 pipe culverts, 38,799 square yards sodding, 18,949 lin. ft. of guide rail, 6,020 lin. ft. of underdrain, 17.58 miles of stabilized base, 18,900 cu. yds. granular material on 17.58 miles, 59,851 cu. yds. crushed gravel on 22.08 miles, 24.08 miles asphaltic concrete pavement.

Maintenance: 28 miles of roadside ditching, 25 miles bituminous surface treatment, 24 miles calcium dust layer, 111 cu. yds. pit-run gravel, 10,570 cu. yds. crushed gravel.

Equipment Purchases: 4 3-ton dump trucks, 1 ranch wagon, 1 $\frac{1}{2}$ -ton pick-up truck, 3 one-way snowploughs, 7 metal slush scrapers.

Land Purchase: 35.65 acres.

Townships—Construction: 38.5 acres clearing and grubbing, 272.75 miles grading, 6 wooden bridges, 3 steel bridges, 60 concrete bridges, 70 culverts, 476 pipe culverts, 47,382 square yards of sodding, 5,800 lin. ft. of guide rail, 11.75 miles of stabilized base, 3,467 rods of fencing, 111,988 cu. yds. of granular material on 18 miles of road, 115,674 cu. yds. crushed gravel on 36.75 miles of road, 66,630 tons of crushed stone on 10 miles of road, 55.75 miles of asphalt surface treatment, 11.3 miles of asphaltic concrete pavement.

Maintenance: 120.85 miles of roadside ditching, 16,200 lin. ft. of offtake ditch, 56.5 miles of bituminous surface treatment, 270 miles oil dust layer, 670 miles of calcium dust layer, 2 miles clay stabilization, 40,230 cu. yds. of pit-run gravel, 170,918 cu. yds. crushed gravel, 208,119 tons crushed gravel, 26,055 tons crushed stone, 52 bridges repaired, 321 culverts.

Equipment Purchases: 3 motor graders, 2 4-wheel drive front end loaders, 5 dump trucks, 6 pick-up trucks, 5 sand spreaders, 2 snowploughs, 1 snow wing, 1 self-propelled rubber-tired roller, 2 steam Jennies, 1 asphalt patching sprayer, 1 power saw, 1 machinery shed, 1 oil furnace for machine shed.

Land Purchased: 38.27 acres.

DISTRICT 7—(3 counties, 34 townships, 2 Indian reserves, 17 urban municipalities)

Northumberland and Durham—Construction: 14.2 miles bituminous surfacing, 16 miles new grade, 7 miles mulch, 92,000 cu. yds. pit run and 45,000 cu. yds. crushed gravel used resurfacing, 1,500 feet guide rail, 1,000 feet underdrain, 1 steel and 1 concrete bridge, 7 concrete culverts.

Maintenance: 8 miles roadside ditching, 20 miles bituminous surface treatment, 45 miles oil and 100 miles calcium dust laying, 310 miles snow clearing, 298 miles weed spray and 310 miles cut, 8,000 cu. yds. pit run and 5,000 cu. yds. crushed gravel used in resurfacing.

Purchases: Adams loader, Meteor sedan, pick-up truck, distributor and spreader.

Peterborough—Construction: 6.5 miles bituminous surfacing, .5 miles new grade, 3 concrete culverts, 25 culvert pipes.

Maintenance: 12.5 miles bituminous surface treatment, 56.6 miles oil and 61.4 calcium dust laying, 212 miles snow clearing, 297 miles weed cutting and spraying, 4,914 cu. yds. pit run and 24,027 cu. yds. crushed gravel used on resurfacing, 12 bridges and 35 culverts repaired.

Purchases: Tractor-mower, grader, front end loader, 12 acres land.

Prince Edward—Construction: 4.3 miles bituminous surfacing, 10.4 miles new grade, 12 miles new surfacing using 4,000 cu. yds. crushed gravel, 2 concrete culverts, 75 culvert pipes, 2,100 rods fencing.

Maintenance: 14 miles bituminous surface treatment, 28 miles oil and 44 miles calcium dust treatment, 190 miles snow clearing, 150 miles weed cutting and spraying, 5,000 cu. yds. pit-run gravel on resurfacing, 1 bridge and 26 culverts repaired.

Purchases: 12 acres land.

Townships—Construction: 44.7 miles bituminous surfacing, 1.5 miles asphalt concrete, 228.6 new grade, 5 wood, 33 steel, 19 concrete culverts, 1 wood, 11 concrete bridges, 1,800 feet guide rail, 120,293 cu. yds. pit run and 77,469 cu. yds. crushed gravel, also 5,325 cu. yds. crushed stone.

Maintenance: 13.5 miles bituminous resurfacing, 83.9 miles roadside ditching, 431 miles oil and calcium dust laying, 3,080 miles snow clearing, 1,650 miles weed cutting and spraying, 52,595 cu. yds. pit run and 93,155 crushed gravel, 95 tons crushed stone, 52 bridges, 196 culverts repaired.

Purchases: 15.4 acres land.

DISTRICT 8—(4 counties, 42 townships, 1 Indian reserve, 18 urban municipalities)

Frontenac—Construction: 8.9 miles of new grade, 21 new pipe culverts installed, 5,250 feet new guide rail, 28,000 cu. yds. crushed stone used on new grades.

Maintenance: 10 miles roadside ditching, 11 miles of oil and 39 miles of calcium dust laying, 12,000 cu. yds. of crushed stone applied on resurfacing.

Purchases: 13.3 acres of land, 1 dump truck.

Hastings—Construction: 3.25 acres cleared, 3.5 miles of new grade, 18 new pipe culverts, 2,161 rods of fencing, 4.5 miles of double surface treatment.

Maintenance: 3.75 miles roadside ditching, 20.7 miles oil and 94 miles calcium dust laying, 20.7 bituminous surface treatment, 20,000 cu. yds. crushed stone and gravel used in resurfacing, 2 bridges widened.

Purchases: 1 3-ton truck with hoist, 1 sedan car.

Leeds and Grenville—Construction: 4.5 miles new grade, 16 new pipe culverts installed, 5,078 rods fencing, 1,000 cu. yds. pit run and 2,864 cu. yds. crushed gravel, 23.8 acres brush cleared.

Maintenance: 1.5 miles ditching, 29.5 miles bituminous surface treatment, 11,227 cu. yds. crushed gravel and 4,027 cu. yds. crushed stone used for resurfacing.

Purchases: 1 115-h.p. grader, 1 ½-ton truck, 1 3-ton dump truck, 10.4 acres of land.

Lennox and Addington—Construction: 23 acres cleared and grubbed, 12 miles new grade, 50 pipe culverts installed, 75,000 cu. yds. pit-run gravel, 6.5 miles light bituminous surfacing.

Maintenance: 18 miles roadside ditching, 10 miles bituminous surface treatment, 9,000 cu. yds. crushed stone used in resurfacing.

Purchases: 1 8-ton tandem dump truck, 1 5-ton dump truck, 22.16 acres of land and 2 gravel pits of 11.8 acres.

Townships—Construction: 39.5 acres cleared and grubbed, 49.87 miles new grade, 1,363 feet new guide rail, 16,000 cu. yds. crushed gravel and stone.

Maintenance: 90 miles roadside ditching, 340 miles dust laying, 150,000 cu. yds. crushed stone and gravel was used in resurfacing, 51 bridges and 486 culverts repaired.

Purchases: 13.7 acres of land, 4 new power graders, 1 used grader, 7 new trucks, 1 hough loader, 2 snowploughs, 1 wing for grader, 1 post hole auger.

DISTRICT 9—(4 county units, 46 townships, 1 Indian reserve, 24 urban municipalities)

Carleton—Construction: 10.8 miles hot mix, 6 miles double surface treatment, 2.2 miles retread, 14 miles stabilized base, 23 miles new grade using 113,085 cu. yds. pit-run gravel, 61,956 cu. yds. crushed gravel, 1,350 lin. ft. guide rail, 7,950 rods fencing, 484 lin. ft. underdrainage, 86 pipe culverts, 3 reinforced concrete culverts.

Maintenance: 12.8 miles bituminous surface treatment, 66 miles calcium dust laying, 180 miles weed spraying, 6.5 miles roadside ditching, 1,500 lin. ft. offtake ditching, 78 miles weed and brush cutting, 10,715 cu. yds. pit-run gravel, 5,095 cu. yds. crushed gravel, 100 cu. yds. crushed stone; 3 bridges and 68 culverts repaired.

Purchases: 2 trucks, 1 pavement marker, 1 chain saw, 1 car; 21.5 acres land.

Lanark—Construction: 4.2 miles hot mix, .75 miles mulch, 1,500 lin. ft. guide rail, 3½ miles stabilized base, 3,935 rods fencing, 14 miles new grade using 73,235 cu. yds. pit-run gravel, 4,844 cu. yds. crushed gravel; 1 steel bridge reinforced concrete substructure; 40 pipe culverts.

Maintenance: 10.8 miles bituminous treatment, 114.5 miles calcium dust laying, 8 miles roadside ditching, 300 lin. ft. offtake ditching, 306 miles weed spraying, 140 miles weed and brush cutting, 6,884 cu. yds. pit-run gravel; 20,431 cu. yds. crushed gravel, 295 cu. yds. crushed stone; 1 bridge repaired.

Purchases: 1 truck, 1 roller, 1 grader, 12.8 acres land.

Prescott and Russell—Construction: 15 miles mulch, 30 miles new grade using 70,000 cu. yds. crushed gravel, 4,500 tons crushed stone, 500 feet guide rail, 12,800 rods fencing; 100 pipe culverts, 1 concrete culvert, 1 beam span bridge.

Maintenance: 6 miles bituminous treatment, 50 miles calcium dust laying, 300 miles weed spraying, 30 cu. yds. crushed gravel, 5 cu. yds. crushed stone.

Purchases: 1 roller, 20 acres land, 1 gravel pit.

Stormont, Dundas and Glengarry—Construction: 10 miles hot mix, 15½ miles mulch, 24 miles new grade using 43,611 cu. yds. pit-run gravel, 33,247 cu. yds. crushed gravel, 82 cu. yds. crushed stone; 11 concrete culverts.

Maintenance: 77 miles calcium dust laying, 217 miles weed spraying, 456 miles weed and brush cutting, 11,898 cu. yds. pit-run gravel, 8,098 cu. yds. crushed gravel.

Purchases: 1 grader, 58.46 acres land.

Townships—Construction: 4¼ miles hot mix, 13 miles mulch, 109 miles new grade using 130,687 cu. yds. pit-run gravel, 154,074 cu. yds. crushed gravel, 9,581 cu. yds. crushed stone, 425 lin. ft. guide rail, 75 lin. ft. underdrainage, 13 miles stabilized base, 9,027 rods fencing, 388 pipe culverts, 7 timber, 6 metal arch, 5 concrete culverts, 5 timber, 3 metal arch, 1 beam span and 12 concrete bridges.

Maintenance: 12¾ miles bituminous treatment, 14½ miles oil dust laying, 752 miles calcium dust laying, 10 miles clay gravel, calcium stabilization, 48½ miles roadside ditching, 15,900 feet offtake ditching, 1,250 miles weed spraying, 874 miles weed and brush cutting, 93,356 cu. yds. pit-run gravel, 336,212 cu. yds. crushed gravel, 13,478 cu. yds. crushed stone; 85 bridges and 273 culverts repaired.

Purchases: 4 trucks, 4 graders, 1 bulldozer, 1 tractor and mower, 1 weed sprayer, 1 platform scale, 1 power unit, 1 welder, 1 steam boiler, 1 snowplough, 31 acres land, 2 gravel pits.

DISTRICT 10—(1 county, 39 townships, 1 Indian reserve, 12 urban municipalities, 4 statute labour boards, 1 unorganized township unit)

Renfrew—Construction: Cleared 2 acres, installed 16 pipe culverts, constructed 1 wooden bridge, erected 1,200 lin. ft. guide rail, constructed 6½ miles stabilized base, erected 3,700 rods fencing.

Maintenance: 6 miles roadside ditching, dustlaid 50 miles road, erected 40 miles snow fence, snowploughed 220 miles road, weed sprayed 90 miles road, weed cut 130 miles road, applied 7,500 cu. yds. crushed gravel, repaired 5 bridges, 12 culverts.

Purchases: 3 trucks, 5.6 acres land.

Townships—Construction: Townships reconstructed 47½ miles of grade and paved 0.6 miles, cleared 32½ acres, installed 309 pipe culverts, constructed 50 other wooden and concrete culverts, constructed 3 wood and 5 steel bridges, built 100 lin. ft. of guide rail and 7,565 rods fence, applied 12¾ miles of pit-run gravel (63,537 cu. yds.) and 6 miles of crushed gravel spread (19,574 cu. yds.), also applied 3 tons of crushed stone.

Maintenance: Townships ditched 157.35 miles roadside, and 6,980 feet offtake, 1¾ miles of bituminous surface treatment, dust treated 110¼ miles, erected 155½ miles snow fence, snowploughed 2,744¾ miles road, sprayed weeds 211½ miles, weed cut 316½ miles, applied 90,851 cu. yds. pit-run gravel and 61,501 cu. yds. crushed gravel and 24,694 tons crushed gravel, repaired 50 bridges and 236 culverts.

Purchases: 2 trucks, 1 snowplough, 3 graders, 1 grader and snowplough, 22 acres land.

Statute Labour and Unorganized Units—Construction: Grading and reshaping 19 miles, pit-run gravel applied 5,466 cu. yds., culverts installed. 23.

DISTRICT 11—(2 counties, 1 provisional county, 1 district, 49 townships, 1 improvement district, 2 Indian reserves, 21 urban municipalities, 4 unorganized units)

Ontario—Construction: 15 miles light bituminous surfacing, 25 miles new grades using 25,200 cu. yds. pit-run and 3,000 cu. yds. crushed gravel, 3 steel and 3 concrete bridges were built, 5 metal arch and 5 concrete culverts constructed.

Maintenance: 22 miles bituminous treatment, 37 miles calcium dust laying, 255 miles snow clearing, 230 miles weeds cut and sprayed, 8,300 cu. yds. pit and 2,000 cu. yds. crushed gravel together with 3,000 cu. yds. crushed stone used in resurfacing. 18 bridges and 65 culverts repaired.

Purchases: 44 acres land, 1 loader, 1 grader, 2 trucks, 1 plough, 1 sander.

Victoria—Construction: 10.5 miles light bituminous, 14 miles resurfaced with pit run and 14 miles grade with crushed stone. 3 concrete bridges built, 48 culvert pipes.

Maintenance: .35 miles bituminous surface treatment, 110 miles calcium dust laying, 230 miles snow clearing, 428 miles weed cut and sprayed, 2,240 cu. yds. pit and 27,849 cu. yds. crushed gravel together with 2,644 cu. yds. crushed stone used in surface improvement; 15 bridges repaired.

Purchases: 2.7 acres land.

Townships—Construction: 22 miles light bituminous, 7.5 miles asphalt concrete surfacing, 9 miles mulch, 82,811 cu. yards pit run, 52,280 cu. yds. crushed gravel, 3,000 cu. yds. crushed stone, 26 wooden, 21 metal arch and 92 concrete culverts built, 2 wooden, 10 steel bridges constructed, 527 culvert pipes.

Maintenance: 7.5 bituminous resurfaces, 96.7 miles oil dust laying, 470 miles calcium, 1,028 miles weed spraying, 1,863 miles weed cutting, 78,493 cu. yds. pit run, 132,192 crushed gravel used in resurfacing; 85 bridges and 557 culverts repaired.

Purchases: 6 trucks, 8 dump trucks, 2 graders, 5 ploughs, 2 loaders, 4 sanders, 1 sprayer, 1 tractor mower, 1 traxcavator, 1 chain saw.

DISTRICT 12—(18 townships, 4 Indian reserves, 9 urban municipalities, 18 statute labour boards, 6 unorganized units)

Organized Townships—Construction: 11.75 acres cleared; 9.75 miles reconstructed, pit-run gravel 14,225 cu. yds.; 79 pipe culverts and 5 other culverts installed; 2 wooden bridges reconstructed; 0.6 miles mulch pavement constructed and 0.3 miles hot mix asphalt constructed.

Maintenance: 44.85 miles roadside ditching; 3,800 feet offtake ditching, 10.5 miles oil dust layer and 48 miles calcium chloride dust layer applied; 36.85 miles snow fence erected, 933 miles of road snowploughed; 64 miles weed spraying, 92.5 miles of weed cutting, 59,193 cu. yds. of pit-run gravel and 16,916 cu. yds. of crushed gravel applied; 34 bridges and 294 culverts repaired.

Purchases: 1 truck, 1 tractor loader.

Statute Labour and Unorganized Units—Construction: 409 pipe culverts and 1 metal arch culvert were installed; 1 mile of road mulch surfaced, 27 miles of grade reconstructed involving 15 culvert installations and 22,300 cu. yds. pit-run gravel and 2,000 cu. yds. crushed gravel; 1 timber bridge rebuilt.

Maintenance: 50 miles roadside ditching, 5,600 feet offtake ditching; 56 miles of brush cutting, 9 miles of snow fence erected; 421 miles snowploughed, 63,700 cu. yds. pit-run gravel and 1,000 cu. yds. crushed gravel applied; 38 bridges and 300 culverts repaired.

DISTRICT 13—(18 organized townships, 7 urban municipalities, 17 statute labour boards, 23 unorganized units)

Organized Townships—Construction: 1 mile of mulch pavement, 21 miles of reshaping, 22,760 cu. yds. pit-run gravel and 130 cu. yds. crushed gravel on reconstructed grade; 2 bridges and 30 culverts all timber and 210 metal culverts; erection of 1 machinery shed.

Maintenance: 54,468 cu. yds. pit-run gravel; 8,654 cu. yds. crushed gravel; 39 bridges and 151 culverts repaired.

Purchases: 2 trucks, 3 snowploughs, 3 snow wings, 2 graders, 2 sanders, 1 rock drill.

Statute Labour and Unorganized Units—Construction: 2 bridges and 5 culverts, 108 metal culverts, 21,634 cu. yds. pit-run gravel applied on reconstructed grade.

Maintenance: 38 miles roadside ditching, 4,970 feet offtake ditching, 128 miles weed and brush cutting, 21,350 cu. yds. pit-run gravel; 27 bridges and 154 culverts repaired.

DISTRICT 14—(23 townships, 3 improvement districts, 9 urban municipalities, 26 statute labour boards, 59 unorganized units)

Organized Townships—Construction: 3 miles mulch, 11 miles clearing and grubbing, 6 miles new grade, 14,400 cu. yds. pit-run gravel, 4,600 cu. yds. gravel, 4 timber and 1 steel bridge.

Maintenance: 90 miles brush cutting, 249 miles weed spraying, 48,800 cu. yds. pit-run, 8,000 cu. yds. crushed gravel, 193 miles snow fence, 671 miles snowploughing, 99 miles ditching, 5.5 bituminous surface treatment, 28 miles dust laying, 8 miles calcium, 39 bridges, 183 culverts.

Purchases: 1.6 acres land, 1 grader, 1 truck.

Statute Labour and Unorganized Units—Maintenance: 35 miles ditching, 55 miles brush cutting, 77 miles snow fence, 215 miles snowploughing, 43,500 cu. yds. pit-run gravel, 50 bridges and 190 culverts repaired.

DISTRICT 16—(4 organized townships, 5 urban municipalities, 2 improvement districts, 1 Indian reserve, 27 statute labour boards, 3 unorganized units)

Organized Townships—Construction: 0.48 miles new grade using 2,368 cu. yds. pit-run gravel and 2,524 cu. yds. crushed gravel; paved 0.77 miles, prepared grade with plant mix mulch; replaced 1 timber bridge.

Maintenance: Cleaning 18.25 miles and 1,325 lin. ft. ditches; 12.95 miles brush and weed cutting; 18,588 cu. yds. pit-run gravel resurfacing; 28.5 miles snow fence; 249 miles snowploughing; 15 bridges and 38 culverts repaired.

Purchases: 1 new and 1 factory reconditioned grader, 1 6-ton truck with snowploughing equipment.

Statute Labour and Unorganized Townships—Construction: 7.5 miles of roadside and 370 lin. ft. of ditching; 3,699 cu. yds. pit-run gravel and 8,904 cu. yds. crushed stone on new grade; 6 timber bridges, 1 timber culvert and 17 C.I.P. culverts; major repairs to 2 native timber structures.

Maintenance: Cleaning 33.75 miles roadside ditches and 8,245 lin. ft. offtake ditches; 109.25 miles brush and weed cutting; 31,613 cu. yds. pit-run gravel resurfacing; 6.95 miles snow fence and 142 miles snowploughing.

DISTRICT 17—(26 organized townships, 11 urban municipalities, 7 Indian reserves, 1 improvement district, 18 statute labour boards and 34 unorganized units)

Organized Townships—Construction: 113.98 miles grade constructed, using 90,212 cu. yds. pit-run gravel, and 16,432 cu. yds. crushed gravel. 402 miles hot mix asphalt laid and 6.9 miles light bituminous surfacing. 4,730 feet guide rail erected, 400 feet underdrain, 32 rod fencing, 2 small bridges rebuilt, 273 culverts placed.

Maintenance: 39,186 cu. yds. pit-run gravel used, 9,591 cu. yds. crushed gravel used. 92.91 miles ditching, 12,840 feet offtake ditching. 4.5 miles oil dust laid, 136.50 miles calcium chloride dust laid. 122.25 miles snow fence, 825 miles snowploughed, 116 miles weed sprayed, 64.5 miles weed cutting, 36 bridges repaired, 139 culverts repaired.

Purchases: 1 truck, 1 asphalt maintenance kettle, 1 spreader, 1 panel truck, 1 trailer.

Statute Labour and Unorganized Units—Construction: 9.8 miles grade constructed, 128 culverts laid, 1 wooden bridge built, 500 feet guide rail erected and 400 cu. yds. pit-run gravel used.

Maintenance: 23.5 miles roadside ditching, 2,240 feet offtake ditching, 45 miles weed and brush cutting, 13.3 miles snow fence erected, 189.8 miles snowploughed, 32,792 cu. yds. pit-run gravel used, 664 cu. yds. crushed gravel, 17 bridges repaired and 69 culverts repaired.

DISTRICT 18—(18 organized townships, 2 improvement districts, 7 urban municipalities, 1 Indian reserve, 56 unorganized units, 18 statute labour boards)

Organized Townships—Construction: 278 miles new grades using 690,000 cu. yds. pit run, 59,300 yds. crushed gravel and 3,000 cu. yds. crushed stone, 22 miles asphalt mix was laid; 3 timber and 1 concrete bridge built. 13 wood, 3 metal and 1 concrete culvert constructed, 137 pipe culverts.

Maintenance: 300 miles roadside ditching, 8 miles oil and 78 miles calcium dust laying, 896 miles snow clearing, 203 miles weeds sprayed, 35 miles weeds cut, 75,915 cu. yds. pit-run and 21,250 cu. yds. crushed gravel with 395 cu. yds. crushed stone; 24 bridges and 203 culverts repaired.

Purchases: 1 snowplough and wing, 2 trucks, 1 tractor grader and loader, 1 garage building and lot, 1 gravel pit, 1 stone quarry.

Statute Labour and Unorganized Units—Construction: 5.5 miles new grade using 14,020 cu. yds. pit-run gravel, 66 pipe culverts, 20 acres cleared of brush, 830 guard rails, 8 timber and 1 steel bridge, 1 culvert.

Maintenance: 28 miles roadside ditching, 40.2 miles brush cutting, 155 miles snowploughing, 33,875 cu. yds. pit-run gravel; 14 bridges and 36 culverts repaired.

DISTRICT 19—(10 townships, 3 urban municipalities, 8 improvement districts, 22 statute labour boards, 7 unorganized units, 1 Indian reserve)

Organized Townships—Construction: 6.5 miles asphaltic concrete, 16.2 miles mulch, 10.75 miles new grade using 21,759 cu. yds. pit-run gravel, 8,000 cu. yds. crushed gravel, 4,445 cu. yds. crushed stone, 8 wooden bridges, 47 timber culverts, 221 metal culverts.

Maintenance: 74.45 miles calcium dust laying, 11 miles oil, 256 miles weed spraying, 61 miles roadside ditching; 40,759 cu. yds. pit-run gravel, 32,553 cu. yds. crushed gravel; 32 bridges repaired, 134 culverts.

Purchases: 2 trucks, 1 pick-up, 1 used welder, 1 5-ton truck with plough and wing, 1 spreader, 1 grader with snowplough and wing, 1 steamer.

Statute Labour and Unorganized Units—Construction: 10 miles new grade using 43,986 cu. yds. pit-run and 4,760 cu. yds. crushed gravel, 149 culvert pipes, 146 wooden culverts were constructed; 13 timber bridges built.

Maintenance: 60 miles roadside ditching, 1,655 feet brush clearing, 52.2 miles snow fence, 420 miles snow clearing, 102 miles weed cutting, 47,235 cu. yds. pit-run and 630 cu. yds. crushed gravel used resurfacing; 34 bridges and 163 culverts repaired.

DISTRICT 20—(18 townships, 6 urban municipalities, 24 statute labour boards, 39 unorganized units)

Organized Townships—Construction: 12.0 acres clearing and grubbing, 10.6 miles grade, 29 pipe culverts and 5 wooden culverts installed, 2.0 miles base stabilized, 3,965 cu. yds. pit gravel on 6.2 miles of grade, and 380 cu. yds. crushed gravel on 0.5 miles grade; 1 equipment garage.

Maintenance: Roadside ditching 10.7 miles with 1,350 lin. ft. offtake ditching, oil dust layer on 4.1 miles, 11.0 miles calcium chloride, 84.7 miles snow fence erected, 614 miles kept open, 124 miles weed spraying, 168 miles weed cutting, 49,553 cu. yds. crushed gravel, 103 cu. yds. pit run; 15 bridges and 155 culverts repaired.

Purchases: 1 distributor, 1 grader with plough and wing, 1 truck.

Statute Labour and Unorganized Units—Construction: Clearing and grubbing 6.2 acres, 7.10 miles, grade, 128 pipe culverts, 12 wooden culverts, 2 wooden bridges, 200 lin. ft. guide rail erected; 12,814 cu. yds. pit gravel, on 36.0 miles of grade.

Maintenance: Roadside ditching 55.3 miles, 7,734 lin. ft. offtake ditching, 121.6 miles weed and brush cutting, 27.4 miles snow fence, 291.6 miles snowploughing, resurfacing 52,166 cu. yds. pit-run gravel; 12 bridges repaired, 231 culverts.



New grading and zone striping on Highway 43 east of Monkland, Ottawa District.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS,
CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED
TOWNSHIPS, BY COUNTIES AND DISTRICTS

April 1st, 1958, to March 31st, 1959

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway No. 2.....	\$ 249,716.02	\$ 69,943.79	\$ 319,659.81
" " 5.....	43,730.87	29,387.74	73,118.61
" " 24.....	42,683.81	33,773.33	76,457.14
" " 24A.....	99.40	16,213.67	16,313.07
" " 53.....	16,089.74	51,902.54	67,992.28
" " 54.....	12,467.44	38,772.34	51,239.78
" " 99.....	620.71	17,430.15	18,050.86
Micellaneous Surveys.....	108.61	.....	108.61
Connecting Link:			
Town of Paris.....	.....	53.62	53.62
	\$ 365,516.60	\$ 257,477.18	\$ 622,993.78
Bruce:			
Highway No. 4.....	\$ 1,271.71	\$ 49,160.25	\$ 50,431.96
" " 6.....	102,549.28	254,449.16	356,998.44
" " 9.....	4,968.81	89,311.38	94,280.19
" " 21.....	417,426.21	127,355.66	544,781.87
" " 86.....	164.42	22,455.07	22,619.49
Connecting Links:			
Town of Hanover.....	.....	375.35	375.35
Town of Kincardine.....	.....	321.95	321.95
Village of Mildmay.....	.....	1,082.92	1,082.92
Village of Teeswater.....	.....	567.46	567.46
Town of Walkerton.....	.....	1,479.49	1,479.49
Town of Wiarton.....	.....	2,032.61	2,032.61
Development Road:			
Elora Road.....	315,306.43	.....	315,306.43
	\$ 841,686.86	\$ 548,591.30	\$ 1,390,278.16
Carleton:			
Highway No. 15.....	\$ 78,130.59	\$ 34,207.67	\$ 112,338.26
" " 15A.....	.....	23,225.40	23,225.40
" " 16.....	32,673.71	61,942.10	94,615.81
" " 17.....	971,763.20	119,216.75	1,090,979.95
" " 17B.....	203,688.38	10,976.98	214,665.36
" " 29.....	3,970.68	7,587.42	11,558.10
" " 31.....	62,512.32	44,851.68	107,364.00
" " 44.....	3,455.41	18,078.50	21,533.91
Ottawa Queensway.....	1,268,330.15	.....	1,268,330.15
Connecting Link:			
City of Ottawa.....	Cr. 4,111.07	.....	Cr. 4,111.07
Development Roads:			
Burritt's Falls to Merrickville.....	14,482.68	.....	14,482.68
Munster Side Road.....	.....	5,249.94	5,249.94
River Road, Township of North Gower..	.....	1,674.45	1,674.45
Fitzroy Harbour Road.....	76,558.07	.....	76,558.07
Fitzroy and Torbolton Boundary Road	12,275.56	.....	12,275.56
Herbert's Corners to			
Gloucester Boundary..	2,584.10	.....	2,584.10
Montague Twp. Boundary to			
Hwy. No. 16.....	53,414.77	.....	53,414.77
	\$2,779,728.55	\$ 327,010.89	\$3,106,739.44

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Dufferin:			
Highway No. 9.....	\$ 25,444.63	\$ 47,270.68	\$ 72,715.31
“ “ 10.....	141,885.33	66,126.24	208,011.57
“ “ 24.....	4,922.26	27,738.58	32,660.84
“ “ 89.....	7,536.84	18,080.44	25,617.28
“ “ 104.....	.....	4,546.95	4,546.95
Connecting Links:			
Town of Orangeville.....	.....	339.64	339.64
Village of Shelburne.....	.....	1,159.46	1,159.46
Development Roads:			
Shelburne-Mt. Forest Road.....	418,402.62	.....	418,402.62
Relessey Rd., Mono Township.....	124,904.22	.....	124,904.22
	\$ 723,095.90	\$ 165,261.99	\$ 888,357.89
Elgin:			
Highway No. 3.....	\$ 326,681.68	\$ 111,077.57	\$ 437,759.25
“ “ 4.....	14,800.00	45,935.46	60,735.46
“ “ 19.....	257.41	324,268.83	324,526.24
“ “ 73.....	.....	27,500.00	27,500.00
“ “ 74.....	9,407.33	14,285.25	23,692.58
“ “ 75.....	29,809.25	4,077.48	33,886.73
“ “ 76.....	26,485.15	11,785.34	38,270.49
“ “ 77.....	36,462.54	5,243.12	41,705.66
“ “ 401.....	323,802.99	.....	323,802.99
Miscellaneous Surveys.....	.67	.....	.67
Connecting Links:			
Town of Aylmer.....	.....	123.75	123.75
Village of Dutton.....	.....	202.38	202.38
Development Roads:			
Calton-Griffin's Corners.....	45,092.52	.....	45,092.52
	\$ 812,799.54	\$ 544,499.18	\$1,357,298.72
Essex:			
Highway No. 2.....	\$ 9,509.34	\$ 38,237.71	\$ 47,747.05
“ “ 3.....	25,821.72	86,698.13	112,519.85
“ “ 3B.....	4,843.54	7,208.45	12,051.99
“ “ 18.....	48,865.88	64,573.12	113,439.00
“ “ 18A.....	2,667.40	21,988.17	24,655.57
“ “ 39.....	773,079.80	21,659.37	794,739.17
“ “ 98.....	1,990.49	36,995.64	38,986.13
“ “ 107.....	299.89	1,285.77	1,585.66
“ “ 114.....	1,322.69	1,367.44	2,690.13
“ “ 401.....	325,326.90	65,610.03	390,936.93
Peelee Island.....	101,677.00	4,579.64	106,256.64
Connecting Links:			
Town of Amherstberg.....	.....	57.30	57.30
Town of Essex.....	.....	227.49	227.49
Town of Harrow.....	.....	541.60	541.60
Town of Kingsville.....	.....	313.21	313.21
Town of Lasalle.....	.....	82.82	82.82
Town of Leamington.....	.....	275.34	275.34
Town of Ojibway.....	.....	217.34	217.34
Town of Tecumseh.....	35,739.01	468.90	36,207.91
	\$1,331,143.66	\$ 352,387.47	\$1,683,531.13
Frontenac:			
Highway No. 2.....	\$ 12,905.85	\$ 74,262.09	\$ 87,167.94
“ “ 7.....	367,562.36	62,042.33	429,604.69
“ “ 15.....	245,549.58	62,260.07	307,809.65
“ “ 33.....	16,020.65	16,172.19	32,192.84
“ “ 38.....	134,540.13	122,932.96	257,473.09
“ “ 41.....	843.13	12,857.20	13,700.33
“ “ 95.....	27,511.73	14,268.85	41,780.58
“ “ 96.....	8,651.50	39,105.68	47,757.18

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Frontenac (Cont'd):			
Highway No. 401	\$1,083,367.31	\$ 46,849.42	\$1,130,216.73
Secondary Highway No. 506	27,448.74	48,989.64	76,438.38
Secondary Highway No. 509	73.19	13,831.90	13,905.09
Connecting Link:			
City of Kingston	19,738.86	.....	19,738.86
Development Roads:			
Perth Road	82,789.25	.....	82,789.25
Mass Road	95,913.08	.....	95,913.08
Desert Lake Road	15,492.49	.....	15,492.49
Snow Road-Ompah	43,685.15	.....	43,685.15
Concessions 3 and 4, Township of Pittsburgh Road	22,079.76	.....	22,079.76
Otter Lake Road	22,773.92	.....	22,773.92
Crow Lake Road	24,984.02	.....	24,984.02
	\$2,251,930.70	\$ 513,572.33	\$2,765,503.03
Grey:			
Highway No. 4	\$ 19,140.95	\$ 69,386.18	\$ 88,527.13
" " 6	1,076,272.41	281,961.44	1,358,233.85
" " 10	4,741.22	77,202.63	81,943.85
" " 21	1,797.02	21,109.49	22,906.51
" " 24 .....	.....	8,147.00	8,147.00
" " 26	9,056.11	76,296.41	85,352.52
Miscellaneous Surveys	6.17	.....	6.17
Connecting Links:			
Village of Chatsworth .....	.....	549.96	549.96
Town of Durham .....	.....	1,788.74	1,788.74
Village of Flesherton .....	.....	991.52	991.52
Town of Hanover .....	.....	1,751.60	1,751.60
Village of Markdale .....	.....	610.42	610.42
Town of Meaford .....	.....	5,091.11	5,091.11
Town of Thornbury .....	.....	512.96	512.96
Development Roads:			
Big Bay-Oxenden	71,372.40	.....	71,372.40
Shelburne-Mount Forest Road	41,708.75	.....	41,708.75
Hanover, southerly	376,254.81	.....	376,254.81
Flesherton-Singhampton Road	75,874.59	.....	75,874.59
	\$1,676,224.43	\$ 545,399.46	\$2,221,623.89
Haldimand:			
Highway No. 3	\$ 9,422.90	\$ 137,470.11	\$ 146,893.01
" " 6	94,715.06	61,606.86	156,321.92
" " 54	16,513.51	46,201.78	62,715.29
" " 56	1,700.42	30,043.18	31,743.60
Connecting Links:			
Town of Caledonia .....	.....	224.46	224.46
Village of Cayuga .....	.....	240.09	240.09
Town of Dunnville .....	.....	1,046.71	1,046.71
Village of Hagersville .....	.....	653.75	653.75
Village of Jarvis .....	.....	645.26	645.26
Development Roads:			
Grand River Road	163,340.78	.....	163,340.78
Old Indian Line Road	4,640.04	.....	4,640.04
	\$ 290,332.71	\$ 278,132.20	\$ 568,464.91
Halton:			
Highway No. 2	\$ 38,649.97	\$ 87,456.67	\$ 126,106.64
" " 5	392,708.38	51,255.91	443,964.29
" " 7	8,387.24	45,683.00	54,070.24
" " 20	468.46	2,492.84	2,961.30
" " 25	741,652.15	76,024.42	817,676.57
" " 122	49,674.54	19,585.12	69,259.66
" " 401	2,542,834.25	.....	2,542,834.25

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Halton (Cont'd):			
Queen Elizabeth Way.....	\$3,042,751.14	\$ 200,541.19	\$3,243,292.33
Freeman-Wolfe Island.....	379,160.41	.....	379,160.41
Miscellaneous Surveys.....	3,311.08	.....	3,311.08
Connecting Links:			
Town of Acton.....	.....	787.77	787.77
Town of Burlington.....	.....	949.57	949.57
Town of Georgetown.....	.....	1,964.63	1,964.63
Town of Milton.....	.....	753.39	753.39
	\$7,199,597.62	\$ 487,494.51	\$7,687,092.13
Hastings:			
Highway No. 2.....	\$ 18,068.60	\$ 71,945.80	\$ 90,014.40
" " 7.....	15,947.46	74,738.06	90,685.52
" " 14.....	4,876.22	108,087.49	112,963.71
" " 28.....	5,354.88	29,291.67	34,646.55
" " 33.....	10,692.22	26,885.53	37,577.75
" " 37.....	36,951.64	88,030.28	124,981.92
" " 62.....	53,129.00	151,365.52	204,494.52
" " 109.....	372.94	6,014.53	6,387.47
" " 127.....	22,399.19	16,905.06	39,304.25
" " 401.....	2,692,417.42	76,427.86	2,768,845.28
Secondary Road No. 500.....	32,714.10	63,207.82	95,921.92
" " " 502.....	1,762.40	11,109.56	12,871.96
" " " 517.....	.....	12,997.10	12,997.10
" " " 620.....	85,458.87	32,904.20	118,363.07
Miscellaneous Surveys.....	7,264.03	.....	7,264.03
Connecting Links:			
Town of Deseronto.....	.....	1,955.31	1,955.31
Village of Madoc.....	.....	904.47	904.47
Village of Marmora.....	.....	788.06	788.06
Sep. Town of Trenton.....	40,108.82	.....	40,108.82
Development Roads:			
Bessemere-Hermon Road.....	2,519.60	.....	2,519.60
Lower Faraday Road.....	12,158.08	.....	12,158.08
Madoc-Moira Lake.....	76,562.52	.....	76,562.52
Concessions 9 and 10, Township of Hungerford.....	26,220.00	.....	26,220.00
Halloway By-pass.....	27,191.10	.....	27,191.10
Ridge Road in Rawdon.....	54,466.69	.....	54,466.69
Bird's Creek-Baptiste Road.....	46,717.28	.....	46,717.28
Purdy-Centreview Road.....	24,483.89	.....	24,483.89
Bannockburn-Cooper Road.....	9,696.90	.....	9,696.90
Sulphide-Tweed.....	3,180.31	.....	3,180.31
	\$3,310,714.16	\$ 773,558.32	\$4,084,272.48
Huron:			
Highway No. 4.....	\$ 53,139.54	\$ 127,517.61	\$ 180,657.15
" " 8.....	36,237.77	51,011.02	87,248.79
" " 9.....	.....	2,585.84	2,585.84
" " 21.....	690,065.01	138,079.55	828,144.56
" " 23.....	.....	9,315.15	9,315.15
" " 81.....	2,101.14	11,607.43	13,708.57
" " 83.....	15,946.24	45,391.80	61,338.04
" " 84.....	38,025.43	23,650.75	61,676.18
" " 86.....	373,587.05	94,016.60	467,603.65
" " 87.....	.....	32,577.40	32,577.40
Miscellaneous Surveys.....	4.73	.....	4.73
Sidewalks:			
Bluevale.....	517.50	.....	517.50
Blyth.....	1,561.69	.....	1,561.69
Connecting Links:			
Town of Clinton.....	.....	665.94	665.94
Town of Exeter.....	.....	2,319.81	2,319.81
Town of Goderich.....	30,202.50	715.50	30,918.00

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Huron (Cont'd):			
Town of Seaforth.....	\$	\$ 1,080.31	\$ 1,080.31
Town of Wingham.....	.....	8,234.86	8,234.86
Development Road:			
Dunlop-Blyth Road	108,650.14	.....	108,650.14
	\$1,350,038.74	\$ 548,769.57	\$1,898,808.31
Kent:			
Highway No. 2	\$ 435,809.21	\$ 59,710.61	\$ 495,519.82
" " 3	33,104.33	82,068.63	115,172.96
" " 21	370.05	31,920.21	32,290.26
" " 40	18,417.21	32,600.13	51,017.34
" " 78	10,499.76	13,856.31	24,356.07
" " 79	3,621.21	4,238.38	7,859.59
" " 98	1,863,291.30	31,913.23	1,895,204.53
" " 401	1,179,811.25	.....	1,179,811.25
Connecting Links:			
Town of Blenheim.....	.....	313.67	313.67
Town of Bothwell.....	.....	411.72	411.72
City of Chatham.....	1,376.34	.....	1,376.34
Town of Dresden.....	6,499.80	324.72	6,824.52
Town of Ridgetown.....	.....	356.52	356.52
Village of Thamesville.....	.....	241.25	241.25
Town of Tilbury.....	.....	128.50	128.50
Town of Wallaceburg.....	.....	1,046.90	1,046.90
Village of Wheatley.....	.....	117.47	117.47
Development Road:			
Highgate-Highway No. 3.....	50,747.33	.....	50,747.33
	\$3,603,547.79	\$ 259,248.25	\$3,862,796.04
Lambton:			
Highway No. 7	\$ 477,042.28	\$ 82,418.18	\$ 559,460.46
" " 21	11,564.07	88,774.74	100,338.81
" " 22	47.68	2,380.59	2,428.27
" " 40	16,200.97	37,718.21	53,919.18
" " 79	8,082.92	29,512.70	37,595.62
" " 80	9,646.82	11,138.56	20,785.38
" " 82	4,954.08	65,195.11	70,149.19
" " 402	46,986.11	5,274.50	52,260.61
Connecting Links:			
Village of Alvinston.....	.....	417.40	417.40
Town of Forest.....	.....	311.26	311.26
Town of Thedford.....	.....	1,169.83	1,169.83
Village of Wyoming.....	.....	20.00	20.00
Development Road:			
Alvinston-Courtright	72,234.01	.....	72,234.01
	\$ 646,758.94	\$ 324,331.08	\$ 971,090.02
Lanark:			
Highway No. 7	\$ 539,600.39	\$ 40,885.70	\$ 580,486.09
" " 15	931,561.85	84,626.33	1,016,188.18
" " 15A	1,294.22	1,155.61	2,449.83
" " 29	10,991.99	88,678.62	99,670.61
" " 44	2,666.32	6,790.54	9,456.86
" " 110 .....	.....	2,693.83	2,693.83
Secondary Road No. 511	657.80	23,750.80	24,408.60
Miscellaneous Surveys.....	31.57	.....	31.57
Connecting Link:			
Town of Almonte.....	.....	6,273.91	6,273.91
Development Roads:			
French Line Road.....	.....	9,984.94	9,984.94
Maberley-Bolingbroke Road.....	34,987.21	.....	34,987.21
Burritt's Falls-Merrickville.....	25,344.70	.....	25,344.70
Lanark Village-Elphir.....	100,435.91	.....	100,435.91

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lanark (Cont'd):			
Relocation County Road 12B.....	\$ 77,761.63	\$	\$ 77,761.63
Caldwell's Mills Road.....	12,000.00	.....	12,000.00
Concession 1, Township of Dalhousie.....	15,476.63	.....	15,476.63
Merrywood Road.....	58,057.97	.....	58,057.97
	\$1,810,868.19	\$ 264,840.28	\$2,075,708.47
Leeds and Grenville:			
Highway No. 2.....	\$ 26,024.28	\$ 145,612.68	\$ 171,636.96
" " 15.....	68,247.51	85,509.53	153,757.04
" " 16.....	8,552.01	58,766.93	67,318.94
" " 29.....	552,075.93	63,705.70	615,781.63
" " 32.....	21,701.18	45,617.18	67,318.36
" " 42.....	13,647.51	79,967.36	93,614.87
" " 401.....	2,758,889.18	106,468.71	2,865,357.89
Hill Island.....		3,395.89	3,395.89
Miscellaneous Surveys.....	11,588.14	.....	11,588.14
Sidewalk:			
Cardinal.....	2,937.00	.....	2,937.00
Connecting Links:			
Sep. Town of Gananoque.....	1,255.83	.....	1,255.83
Village of Kemptville.....	.....	147.70	147.70
Development Roads:			
Rideau River Road.....	86,537.59	.....	86,537.59
Lyn-Row's Corners.....	6,216.73	.....	6,216.73
Houghton Bay Road.....	10,038.76	.....	10,038.76
Escott-Escott Centre.....	16,145.42	.....	16,145.42
Caintown-Highway No. 2.....	37,603.50	.....	37,603.50
Westport-Bedford Mills.....	35,380.00	.....	35,380.00
Kemptville easterly.....	36,403.47	.....	36,403.47
Lilly's Corners-Lyndhurst.....	52,262.34	.....	52,262.34
Bay Road.....	8,000.00	.....	8,000.00
Prescott Suburban Road.....	9,362.95	.....	9,362.95
	\$3,762,869.33	\$ 589,191.68	\$4,352,061.01
Lennox and Addington:			
Highway No. 2.....	\$ 14,704.81	\$ 76,483.25	\$ 91,188.06
" " 7.....	4,943.05	22,842.82	27,785.87
" " 33.....	23,361.50	68,597.69	91,959.19
" " 41.....	247,020.10	171,362.01	418,382.11
" " 401.....	74,427.63	.....	74,427.63
Ferries.....	14,902.16	54,659.07	69,561.23
Secondary Road No. 500.....	6,278.03	.....	6,278.03
" " " 502.....	14,930.29	16,003.92	30,934.21
Connecting Link:			
Town of Napanee.....	.....	4,044.76	4,044.76
Development Roads:			
Milhaven Road.....	Cr. 222.40	.....	Cr. 222.40
Croydon-Reidville.....	26,000.00	.....	26,000.00
Tamworth-Centreville.....	30,392.30	.....	30,392.30
Danbigh-Raglan Road.....	.....	22,598.68	22,598.68
Beechwood Road.....	12,711.45	.....	12,711.45
Flinton Road.....	25,500.00	.....	25,500.00
Adolphus Reach Road.....	.....	5,952.20	5,952.20
	\$ 494,948.92	\$ 442,544.40	\$ 937,493.32
Lincoln:			
Highway No. 8.....	\$ 8,069.11	\$ 89,734.25	\$ 97,803.36
" " 8A.....	787.14	8,748.24	9,535.38
" " 20.....	42,994.88	59,181.38	102,176.26
" " 57.....	4,351.48	8,177.28	12,528.76
Highway No. 58.....	2,402.24	9,948.36	12,350.60

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lincoln (Cont'd):			
Queen Elizabeth Way	\$ 98,048.45	\$ 190,903.19	\$ 288,951.64
Miscellaneous Surveys.....	2,763.48		2,763.48
Connecting Links:			
Village of Beamsville.....		441.21	441.21
Town of Grimsby		659.76	659.76
	\$ 159,416.78	\$ 367,793.67	\$ 527,210.45
Middlesex:			
Highway No. 2	\$1,607,143.99	\$ 127,435.29	\$1,734,579.28
" " 4	104,694.16	93,481.56	198,175.72
" " 7	240,328.15	81,771.14	322,099.29
" " 22	1,191,312.00	44,690.43	1,236,002.43
" " 23		15,835.78	15,835.78
" " 73	105.12	19,156.80	19,261.92
" " 74	1,311.49	9,264.46	10,575.95
" " 76	561.70	1,783.95	2,345.65
" " 80	7,130.51	30,893.25	38,023.76
" " 81	106,199.84	96,620.53	202,820.37
" " 135	201,191.38	6,840.93	208,032.31
" " 401	334,225.24	122,577.96	456,803.20
Miscellaneous Surveys	3,187.18		3,187.18
Connecting Links:			
City of London.....	256,071.99		256,071.99
Village of Lucan		1,142.22	1,142.22
Town of Parkhill		1,051.69	1,051.69
Development Road:			
Clandebye-Highway No. 7.....	166,690.39		166,690.39
	\$4,220,153.14	\$ 652,545.99	\$4,872,699.13
Norfolk:			
Highway No. 3	\$ 9,551.23	\$ 61,705.05	\$ 71,256.28
" " 6	320.00	24,499.17	24,819.17
" " 19		64,662.50	64,662.50
" " 24	9,379.79	187,793.98	197,173.77
" " 59	126.04	5,216.09	5,342.13
Connecting Links:			
Town of Delhi		328.70	328.70
Town of Simcoe	128,828.17	469.79	129,297.96
Development Roads:			
Long Point Park Approach.....	216.40		216.40
Courtland-Port Rowan Road.....	450,426.94		450,426.94
	\$ 598,848.57	\$ 344,675.28	\$ 943,523.85
Northumberland and Durham:			
Highway No. 2	\$ 42,993.22	\$ 193,792.09	\$ 236,785.31
" " 7A	55,695.60	46,644.13	102,339.73
" " 28	145,383.29	41,566.17	186,949.46
" " 30	4,986.91	214,896.49	219,883.40
" " 33	738.70	12,334.16	13,072.86
" " 35	193,320.19	54,481.24	247,801.43
" " 45	222,232.95	46,216.49	268,449.44
" " 106	15,098.54	8,327.10	23,425.64
" " 115	64,120.74	17,809.88	81,930.62
" " 133	1,250.00	3,406.00	4,656.00
" " 401	6,536,092.27	108,433.60	6,644,525.87
Miscellaneous Surveys	247.75		247.75
Connecting Link:			
Town of Port Hope.....		2,846.80	2,846.80
Development Roads:			
Hastings-Campbellford	Cr. 406.49		Cr. 406.49
Burnley-Warkworth Road	Cr. 148.47		Cr. 148.47
Gracien's Corners-Highway No. 45	4,081.26		4,081.26
Enfield, southerly	11,517.56		11,517.56

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Northumberland and Durham (Cont'd):			
Swamp Road Diversion.....	\$ 10,081.40	\$	\$ 10,081.40
Boundary Road, East Whitby and Darlington Townships.....	.....	1,526.52	1,526.52
Morganston-Cuff's Corners.....	142,986.70	.....	142,986.70
Kendal-Garder Hill.....	52,956.10	.....	52,956.10
	\$7,503,228.22	\$ 752,280.67	\$8,255,508.89
Ontario:			
Highway No. 2.....	\$ 10,565.40	\$ 72,569.65	\$ 83,135.05
" " 7.....	8,701.38	76,255.07	84,956.45
" " 7A.....	5,323.88	7,792.94	13,116.82
" " 12.....	515,379.76	147,502.71	662,882.47
" " 47.....	671.61	70,315.96	70,987.57
" " 48.....	296.80	20,006.65	20,303.45
" " 69.....	1,426.95	70,918.63	72,345.58
" " 401.....	437,883.09	225,835.00	663,718.09
Secondary Road No. 503.....	774.99	.....	774.99
Miscellaneous Surveys.....	280.87	.....	280.87
Sidewalk:			
Myrtle Station.....	813.17	.....	813.17
Connecting Links:			
Town of Uxbridge.....	.....	1,505.62	1,505.62
Town of Whitby.....	.....	3,293.96	3,293.96
Development Roads:			
Longford Mills-Highway No. 69.....	2,018.20	.....	2,018.20
Cooper's Falls Road.....	28,073.39	.....	28,073.39
Boundary Road, East Whitby and Darlington Townships.....	.....	1,526.53	1,526.53
	\$1,012,209.49	\$ 697,522.72	\$1,709,732.21
Oxford:			
Highway No. 2.....	\$ 269,500.86	\$ 79,154.43	\$ 348,655.29
" " 3.....	84,607.08	7,939.44	92,546.52
" " 19.....	638,182.80	86,751.71	724,934.51
" " 53.....	197.68	12,133.30	12,330.98
" " 59.....	8,793.73	65,724.93	74,518.66
" " 97.....	5,361.23	61,147.63	66,508.86
" " 100.....	12,840.02	64,731.88	77,571.90
" " 401.....	683,320.87	112,044.03	795,364.90
Miscellaneous Surveys.....	52.56	.....	52.56
Connecting Links:			
Village of Tavistock.....	.....	1,743.62	1,743.62
Town of Tillsonburg.....	.....	509.77	509.77
City of Woodstock.....	36,366.73	15,547.55	51,914.28
	\$1,739,223.56	\$ 507,428.29	\$2,246,651.85
Peel:			
Highway No. 2.....	\$ 144,333.96	\$ 50,803.90	\$ 195,137.86
" " 5.....	1,633,423.22	52,287.38	1,685,710.60
" " 7.....	11,394.92	42,492.57	53,887.49
" " 9.....	3,374.11	28,309.70	31,683.81
" " 10.....	957,897.95	133,717.25	1,091,615.20
" " 24.....	90,191.83	44,031.75	134,223.58
" " 50.....	12,769.24	60,592.71	73,361.95
" " 51.....	301,890.68	9,450.35	311,341.03
" " 122.....	9.78	9,564.46	9,574.24
" " 401.....	2,597,872.13	50,512.19	2,648,384.32
Queen Elizabeth Way.....	1,421,551.14	110,191.43	1,531,742.57
Miscellaneous Surveys.....	1,449.13	.....	1,449.13
Connecting Link:			
Village of Port Credit.....	.....	3,936.03	3,936.03
Development Roads:			
Third Line east, Caledon Township.....	23,866.07	.....	23,866.07

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Peel (Cont'd):			
Fourth Line Road, Albion Township....	\$ 17,371.53	\$	\$ 17,371.53
Heart Lake Road	3,705.72	.....	3,705.72
	\$7,221,101.41	\$ 595,889.72	\$7,816,991.13
Perth:			
Highway No. 7	\$ 12,391.99	\$ 75,251.41	\$ 87,643.40
" " 8	26,826.37	42,249.78	69,076.15
" " 19	33,083.63	81,300.02	114,383.65
" " 23	55,260.12	110,743.43	166,003.55
" " 83 .....	.....	8,481.51	8,481.51
" " 86	4,056.80	33,979.43	38,036.23
" " 100	2,131.57	6,305.48	8,437.05
Connecting Links:			
Town of Listowel .....	.....	28.87	28.87
Town of Mitchell .....	.....	3,698.03	3,698.03
Town of Palmerston .....	.....	469.45	469.45
	\$ 133,750.48	\$ 362,507.41	\$ 496,257.89
Peterborough:			
Highway No. 7	\$ 293,543.06	\$ 46,419.72	\$ 339,962.78
" " 7A	50.00	2,025.63	2,075.63
" " 28	444,551.78	111,538.22	556,090.00
" " 30	2,495.86	4,872.62	7,368.48
" " 36	30,542.05	67,781.98	98,324.03
" " 45	58,387.84	11,956.13	70,343.97
" " 115	9,471.51	.....	9,471.51
" " 121 .....	.....	7,383.61	7,383.61
" " 133	10,938.85	7,116.34	18,055.19
Secondary Road No. 500	41,905.26	16,728.39	58,633.65
" " " 504	Cr. 176.86	78,972.20	78,795.34
" " " 507	26,848.18	54,559.60	81,407.78
Miscellaneous Surveys	1,182.38	.....	1,182.38
Sidewalk:			
Havelock	1,605.96	.....	1,605.96
Development Roads:			
Church Line Road	9,000.64	.....	9,000.64
Hiawatha Road	7,460.07	.....	7,460.07
Lakefield-Nephton Road	4,627.80	.....	4,627.80
Anstruther Lake Road	5,800.00	.....	5,800.00
Katchiwane Lake Road	3,577.99	.....	3,577.99
	\$ 951,812.37	\$ 409,354.44	\$1,361,166.81
Prescott and Russell:			
Highway No. 17	\$ 9,217.35	\$ 134,369.05	\$ 143,586.40
" " 17B .....	.....	84,113.71	84,113.71
" " 34	2,871.61	20,805.64	23,677.25
Sidewalks:			
Chute-a-Blondeau	788.72	.....	788.72
Vankleek Hill	348.00	.....	348.00
Connecting Links:			
Town of Hawkesbury .....	.....	2,971.53	2,971.53
Town of Rockland .....	.....	1,432.32	1,432.32
Development Roads:			
Russell-Embrun-Casselmann	37,947.88	.....	37,947.88
St. Eugene, easterly	31,421.08	.....	31,421.08
Fournier Routhier	7,026.48	.....	7,026.48
Vankleek Hill, westerly	24,326.92	.....	24,326.92
Rose Corner St. Isidore	25,718.91	.....	25,718.91
	\$ 139,666.95	\$ 243,692.25	\$ 383,359.20

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Prince Edward:			
Highway No. 14	\$ 62,243.27	\$ 50,672.81	\$ 112,916.08
" " 33	129,836.94	66,775.07	196,612.01
" " 41	52,196.40	20,303.94	72,500.34
Ferries	14,902.16	54,659.06	69,561.22
Sidewalk:			
Wellington	3,317.96		3,317.96
Connecting Link:			
Town of Picton		63,432.00	63,432.00
Development Roads:			
Carrying Place-Rednersville	Cr. 556.99		Cr. 556.99
Hallowell-Hillier Townline	Cr. 360.16		Cr. 360.16
Picton-Black River Road	81,596.97		81,596.97
	\$ 343,176.55	\$ 255,842.88	\$ 599,019.43
Renfrew:			
Highway No. 17	\$ 452,673.08	\$ 268,777.93	\$ 721,451.01
" " 29	2.59	1,353.98	1,356.57
" " 41	92,147.56	83,898.76	176,046.32
" " 60	466,815.34	127,972.65	594,787.99
" " 62	249,106.47	75,215.03	324,321.50
" " 132	217,317.68	34,601.11	251,918.79
Secondary Road No. 500	1,376.49		1,376.49
" " 508	1,311.35	44,688.40	45,999.75
" " 511	50.00	11,678.37	11,728.37
" " 512	17,164.02	17,764.24	34,928.26
" " 513		20,999.27	20,999.27
" " 515	3,333.07	57,034.60	60,367.67
" " 517		8,836.28	8,836.28
" " 521	4,719.32	43,434.66	48,153.98
Pembroke-Allumette Island	9,124.89		9,124.89
Miscellaneous Surveys	829.62		829.62
Connecting Link:			
Town of Renfrew		1,556.06	1,556.06
Development Roads:			
Hardwood Lake Road	55,737.38		55,737.38
Osceola-Bulgars Corners	4,474.74		4,474.74
Matawatchan-Wilson	15,264.48		15,264.48
Kelly's Corner-Cobden	173,362.76		173,362.76
Lake Dore-Golden Lake	2,333.67		2,333.67
Kennelly's Corners-Douglas	8,000.00		8,000.00
Combermere-Hopefield		11,585.31	11,585.31
Burnstown Road	78,213.09		78,213.09
Black Donald Road	100,464.93		100,464.93
Bonnehcchere River Road	17,786.87		17,786.87
McGrath Road-Clontarf	26,364.27		26,364.27
	\$1,997,973.67	\$ 809,396.65	\$2,807,370.32
Simcoe:			
Highway No. 9	\$ 7,231.54	\$ 28,100.77	\$ 35,332.31
" " 11	581,718.70	197,307.89	779,026.59
" " 11B	153.17		153.17
" " 12	580,458.36	158,682.19	739,140.55
" " 12B	149.47		149.47
" " 24	707.94	34,473.17	35,181.11
" " 26	10,170.46	96,817.22	106,987.68
" " 27	16,878.76	225,693.08	242,571.84
" " 69	481.69		481.69
" " 88	6,770.36	20,536.22	27,306.58
" " 89	8,477.65	49,140.05	57,617.70
" " 90	168,907.83	40,946.00	209,853.83
" " 91		26,562.13	26,562.13
" " 92	3,556.42	35,390.45	38,946.87
" " 93	10,229.50	94,806.47	105,035.97
" " 103	262,391.89	16,406.65	278,798.54

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
Highway No. 400.....	\$2,404,022.16	\$ 264,638.64	\$2,668,660.80
Sidewalk:			
Tay Township.....	2,000.00	.....	2,000.00
Connecting Links:			
Town of Alliston.....	.....	377.11	377.11
City of Barrie.....	.....	10,935.08	10,935.08
Village of Bradford.....	.....	910.41	910.41
Village of Coldwater.....	.....	1,464.14	1,464.14
Town of Collingwood.....	.....	1,544.15	1,544.15
Town of Orillia.....	823.48	4,846.31	5,669.79
Town of Penetang.....	.....	10.36	10.36
Village of Port McNicoll.....	.....	773.08	773.08
Town of Stayner.....	.....	908.83	908.83
Village of Victoria Harbour.....	.....	2,178.99	2,178.99
Development Roads:			
Boundary Road, Oro and Medonte Townships.....	2,960.75	.....	2,960.75
Concessions 1 and 2, Tiny Township.....	11,937.80	.....	11,937.80
Cookstown-Highway 400.....	43,692.01	.....	43,692.01
Angus-Creemore.....	261,959.51	.....	261,959.51
Glen Huron-Dunedin.....	113,414.49	.....	113,414.49
Dalton Road, Orillia Township.....	34,308.46	.....	34,308.46
15th Sideroad, Township of Flos.....	23,680.00	.....	23,680.00
Sunnyside Road, Township of Tay.....	11,514.11	.....	11,514.11
	\$4,568,596.51	\$1,313,449.39	\$5,882,045.90
Stormont, Dundas and Glengarry:			
Highway No. 2.....	\$1,094,878.98	\$ 140,322.27	\$1,235,201.25
" " 31.....	44,711.82	44,598.66	89,310.48
" " 34.....	7,234.12	55,001.06	62,235.18
" " 43.....	547,108.49	77,055.55	624,164.04
" " 401.....	811,675.22	34,455.84	846,131.06
Miscellaneous Surveys.....	5.14	.....	5.14
Connecting Links:			
Town of Alexandria.....	.....	325.20	325.20
Village of Winchester.....	.....	964.88	964.88
Development Roads:			
Maxville-County Road 21.....	22,046.10	.....	22,046.10
County Road No. 16.....	4,914.95	.....	4,914.95
Winchester-Melvin.....	29,701.20	.....	29,701.20
Crysler-Highway 31.....	148,212.69	.....	148,212.69
Hallville-Reidis Mill.....	8,919.16	.....	8,919.16
	\$2,719,407.87	\$ 352,723.46	\$3,072,131.33
Victoria:			
Highway No. 7.....	\$ 977,889.02	\$ 79,400.62	\$1,057,289.64
" " 7B.....	.....	4,343.04	4,343.04
" " 35.....	119,231.40	186,612.60	305,844.00
" " 35A.....	2,294.40	4,298.96	6,593.36
" " 35B.....	.....	4,517.60	4,517.60
" " 36.....	238,869.05	42,589.58	281,458.63
" " 36B.....	.....	3,574.50	3,574.50
" " 46.....	266,264.53	70,232.82	336,497.35
" " 121.....	3,057.92	49,673.57	52,731.49
" " 133.....	6,872.55	3,667.99	10,540.54
Secondary Road No. 500.....	42,232.19	17,107.91	59,340.10
" " " 503.....	96,507.14	152,372.43	248,879.57
" " " 505.....	10,401.19	25,172.27	35,573.46
Miscellaneous Surveys.....	59.89	.....	59.89
Connecting Link:			
Town of Lindsay.....	.....	1,068.45	1,068.45
Development Road:			
Pigeon Lake Road.....	2,399.43	.....	2,399.43
	\$1,766,078.71	\$ 644,632.34	\$2,410,711.05

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Waterloo:			
Highway No. 7.....	\$ 771,671.13	\$ 57,768.74	\$ 829,439.87
" " 8.....	23,540.89	12,074.33	35,615.22
" " 24.....	1,722.87	17,665.45	19,388.32
" " 24A.....		15,486.99	15,486.99
" " 85.....	1,718.11	19,890.83	21,608.94
" " 86.....	388,793.17	61,325.31	450,118.48
" " 97.....	23,464.19	38,468.78	61,932.97
" " 401.....	307,419.40		307,419.40
Miscellaneous Surveys.....	54.18		54.18
Connecting Links:			
Town of Elmira.....		914.17	914.17
Town of Hespeler.....		23.37	23.37
City of Kitchener.....	15,468.92		15,468.92
Village of New Hamburg.....		979.87	979.87
Town of Preston.....		1,178.15	1,178.15
Development Road:			
Elmira By-pass.....	7,176.06		7,176.06
	\$1,541,028.92	\$ 225,775.99	\$1,766,804.91
Welland:			
Highway No. 3.....	\$ 172,177.55	\$ 131,955.21	\$ 304,132.76
" " 3A.....	3,775.78	37,411.21	41,186.99
" " 3C.....	4,717.01	28,227.45	32,944.46
" " 8.....	16,899.96	9,960.46	26,860.42
" " 20.....	13,169.71	47,981.31	61,151.02
" " 57.....	642.16	16,729.20	17,371.36
" " 58.....	9,905.07	62,154.46	72,059.53
Queen Elizabeth Way.....	15,089.47	163,928.50	179,017.97
Miscellaneous Surveys.....	8,796.53		8,796.53
Connecting Link:			
Town of Port Colborne.....		939.16	939.16
	\$ 245,173.24	\$ 499,286.96	\$ 744,460.20
Wellington:			
Highway No. 6.....	\$ 465,483.51	\$ 129,621.55	\$ 595,105.06
" " 7.....	127,358.24	44,745.00	172,103.24
" " 9.....	616,894.90	78,917.23	695,812.13
" " 23.....	1,013.59	6,801.29	7,814.88
" " 24.....	138,983.30	62,282.31	201,265.61
" " 86.....	1,708.71	40,938.86	42,647.57
" " 87.....	3,563.18	11,749.54	15,312.72
" " 401.....	339,191.09		339,191.09
Miscellaneous Surveys.....	361.42		361.42
Connecting Links:			
Village of Arthur.....		963.16	963.16
Village of Clifford.....		987.09	987.09
Town of Fergus.....		1,968.75	1,968.75
Town of Harriston.....		1,065.43	1,065.43
Town of Mount Forest.....		1,204.38	1,204.38
Development Roads:			
Shelburne-Mount Forest.....	17,438.16		17,438.16
Sideroad 20/21 Minto Township.....	10,506.77		10,506.77
County Road No. 84.....	118,522.97		118,522.97
	\$1,841,025.84	\$ 381,244.59	\$2,222,270.43
Wentworth:			
Highway No. 2.....	\$ 24,012.99	\$ 49,068.21	\$ 73,081.20
" " 5.....	2,315.23	51,678.89	53,994.12
" " 6.....	40,484.25	100,665.80	141,150.05
" " 8.....	540,596.61	73,821.03	614,417.64
" " 20.....	627,114.80	48,897.13	676,011.93
" " 52.....	6,992.92	58,857.03	65,849.95
" " 53.....	221,651.18	36,781.25	258,432.43

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Wentworth (Cont'd):			
Highway No. 55.....	\$ 9,763.82	\$ 5,249.89	\$ 15,013.71
" " 56.....	1,079.68	33,114.01	34,193.69
" " 97.....	14,860.36	45,421.95	60,282.31
" " 99.....	4,253.10	50,610.28	54,863.38
" " 102.....	4,401.66	11,317.85	15,719.51
Queen Elizabeth Way.....	3,936,904.95	115,516.58	4,052,421.53
Freeman-Wolfe Island.....	3,526.95	.....	3,526.95
Miscellaneous Surveys.....	7,750.27	.....	7,750.27
Connecting Links:			
Town of Dundas.....	.....	442.21	442.21
City of Hamilton.....	70,649.18	.....	70,649.18
	\$5,516,357.95	\$ 681,442.11	\$6,197,800.06
York:			
Highway No. 2.....	\$ 809.19	\$ 3,672.37	\$ 4,481.56
" " 2A.....	695.52	8,675.24	9,370.76
" " 5.....	16,504.12	19,546.74	36,050.86
" " 7.....	83,384.90	88,543.60	171,928.50
" " 9.....	6,611.43	9,615.87	16,227.30
" " 11.....	795,330.12	141,001.18	936,331.30
" " 27.....	2,177,130.11	166,278.36	2,343,408.47
" " 47.....	18,563.68	20,192.54	38,756.22
" " 48.....	677,461.71	200,572.43	878,034.14
" " 49.....	256,733.11	9,996.24	266,729.35
" " 50.....	1,178.30	12,003.15	13,181.45
" " 400.....	483,032.14	200,060.41	683,092.55
" " 401.....	1,692,703.08	344,248.59	2,036,951.67
Queen Elizabeth Way.....	938,924.55	109,599.58	1,048,524.13
Queensway.....	120,892.81	.....	120,892.81
Bloor Street.....	900,982.53	.....	900,982.53
Yonge Street.....	12,870.20	.....	12,870.20
Dundas Street.....	7,237.86	.....	7,237.86
Lakeshore Expressway.....	498,997.05	.....	498,997.05
Eglinton Avenue.....	700.00	.....	700.00
Miscellaneous Surveys.....	12,895.55	.....	12,895.55
Sidewalks:			
Carrville.....	990.25	.....	990.25
Steeles Avenue.....	3,374.78	.....	3,374.78
Connecting Link:			
Town of Richmond Hill.....	.....	2,777.78	2,777.78
	\$8,708,002.99	\$1,336,784.08	\$10,044,787.07
DISTRICT			
Algoma-Manitoulin:			
Highway No. 17.....	\$9,204,632.68	\$ 623,917.37	\$9,828,550.05
" " 68.....	224,503.11	285,046.87	509,549.98
" " 108.....	675,670.97	43,405.73	719,076.70
" " 129.....	67,079.36	222,812.76	289,892.12
Ferries.....	.....	100,078.22	100,078.22
Secondary Road No. 538.....	.....	3,811.32	3,811.32
" " " 540.....	38,693.72	236,678.54	275,372.26
" " " 542.....	14,839.45	158,930.28	173,769.73
" " " 546.....	12,291.74	64,112.37	76,404.11
" " " 548.....	18,198.84	76,170.03	94,368.87
" " " 550.....	7,055.11	14,831.88	21,886.99
" " " 551.....	2,435.55	40,464.23	42,899.78
" " " 552.....	.....	21,520.72	21,520.72
" " " 553.....	18,167.11	46,330.76	64,497.87
" " " 554.....	.....	39,330.39	39,330.39
" " " 555.....	3,056.10	12,405.80	15,461.90
" " " 556.....	26,140.88	40,634.90	66,775.78
" " " 557.....	6,112.19	21,138.42	27,250.61
" " " 561.....	3,149.08	37,083.03	40,232.11

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Secondary Road No. 563.....	\$	\$ 12,940.75	\$ 12,940.75
" " " 565.....	2,099.51	5,663.43	7,762.94
" " " 631.....	6,137.75	30,822.06	36,959.81
Burwash-Killarney.....	127,821.72	.....	127,821.72
Miscellaneous Surveys.....	67,267.80	.....	67,267.80
Connecting Link:			
City of Sault Ste. Marie.....	12,071.70	.....	12,071.70
Unincorporated Township:			
Campbell.....	.....	13,537.03	13,537.03
Dawson.....	.....	1,836.63	1,836.63
Mills.....	.....	2,238.67	2,238.67
Robinson.....	.....	6,357.84	6,357.84
Aberdeen.....	8,481.88	3,213.15	11,695.03
Aweres.....	.....	2,194.24	2,194.24
Bridgeland.....	.....	75.47	75.47
Bright.....	.....	68.38	68.38
Cobden.....	.....	458.07	458.07
Deroche.....	4.50	14.00	18.50
Fenwick.....	804.23	3,317.70	4,121.93
Galbraith.....	7,500.00	5,324.13	12,824.13
Garden River Indian Reserve.....	.....	2,578.47	2,578.47
Gaudette.....	.....	2,734.29	2,734.29
Gladstone.....	440.17	.....	440.17
Goulais Indian Reserve.....	.....	338.73	338.73
Gros Cap Indian Reserve.....	.....	37.50	37.50
Hodgins.....	.....	103.25	103.25
Houghton.....	.....	64.71	64.71
Kars.....	1,834.60	1,568.24	3,402.84
Kirkwood.....	.....	75.47	75.47
Lewis.....	36.50	103.52	140.02
Mississagi Indian Reserve.....	.....	152.77	152.77
Montgomery.....	.....	159.38	159.38
Morin.....	.....	40.12	40.12
McMahon.....	20,672.46	79.83	20,752.29
Parkinson.....	.....	33.35	33.35
Patton.....	14,630.48	1,783.42	16,413.90
Pennefather.....	.....	131.35	131.35
Plummer.....	.....	5,000.41	5,000.41
Ranger Lake Area.....	13,800.36	2,232.64	16,033.00
Rose.....	.....	1,547.50	1,547.50
Serpent River Indian Reserve.....	.....	123.37	123.37
Shedden.....	.....	8,849.04	8,849.04
Shields.....	4,987.06	911.43	5,898.49
Spanish River Indian Reserve.....	15,000.00	13,580.22	28,580.22
Striker.....	.....	626.33	626.33
Township 29 Range 15.....	.....	37.50	37.50
Township 130.....	.....	42.00	42.00
Township 131.....	.....	14.00	14.00
Vankoughnet.....	.....	970.22	970.22
Victoria.....	.....	4,592.53	4,592.53
Wells.....	981.78	235.27	1,217.05
Development Roads:			
Dean Lake Road.....	44,361.56	.....	44,361.56
Mindemoyo, southerly.....	6,000.00	.....	6,000.00
	\$10,676,959.95	\$2,225,512.03	\$12,902,471.98
Cochrane:			
Highway No. 11.....	\$5,366,262.90	\$ 723,364.86	\$6,089,627.76
" " 67.....	13,743.30	51,638.10	65,381.40
" " 101.....	570,575.23	180,285.64	750,860.87
Ferries.....	.....	26,211.10	26,211.10
Secondary Road No. 572.....	13,512.69	12,361.61	25,874.30
" " 574.....	15,817.27	54,135.35	69,952.62
" " 575.....	.....	2,897.37	2,897.37
" " 576.....	.....	2,602.59	2,602.59

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Secondary Road No. 577.....	\$ 2,757.81	\$ 45,677.99	\$ 48,435.80
" " " 578.....	6,852.12	16,875.65	23,727.77
" " " 579.....	16,847.03	19,177.89	36,024.92
" " " 581.....	5,129.26	1,445.23	6,574.49
" " " 583.....	53,796.07	85,066.68	138,862.75
" " " 610.....		30,388.86	30,388.86
" " " 629.....	63,241.85	13,609.70	76,851.55
" " " 631.....	28.95		28.95
Miscellaneous Surveys.....	126.75		126.75
Sidewalk:			
Val Albert.....	2,120.54		2,120.54
Unincorporated Township Roads:			
Evelyn.....		2,443.20	2,443.20
German.....		2,722.79	2,722.79
Godfrey.....		1,416.66	1,416.66
Jamieson.....		1,416.66	1,416.66
Matheson.....		3,412.33	3,412.33
Ogden.....		466.33	466.33
Robb.....		1,416.65	1,416.65
Shaw.....		3,831.03	3,831.03
Sheraton.....		99.45	99.45
Barker.....		139.08	139.08
Brower.....	769.74	3,843.03	4,612.77
Calder.....		2,162.32	2,162.32
Casgrain.....	2,921.63	767.60	3,689.23
Clute.....		6,665.09	6,665.09
Devitt.....	1,312.51	7,498.30	8,810.81
Eilber.....	4,762.11	3,613.70	8,375.81
Fournier.....	7,591.05	3,088.97	10,680.02
Fox.....		5,618.50	5,618.50
Franz.....	165.96		165.96
Haggart.....		212.23	212.23
Hanlan.....	324.51	5,304.39	5,628.90
Idington.....		2,704.27	2,704.27
Kendal.....	6,615.78	11,221.36	17,837.14
Kennedy.....		5,102.48	5,102.48
Lamarche.....		8,216.97	8,216.97
Lowther.....		3,799.79	3,799.79
McCrea.....	5.97	817.10	823.07
Nansen.....	463.08	4,345.14	4,808.22
Newmarket.....		4,936.57	4,936.57
O'Brien.....		1,961.64	1,961.64
Owens.....	8,913.09	3,631.63	12,544.72
Pyne.....		5,743.11	5,743.11
Way.....		11,871.41	11,871.41
Williamson.....	1,630.67	4,070.00	5,700.67
Development Roads:			
Genier and Boundary Road, Glackmeyer Township.....	Cr. 2,550.10		Cr. 2,550.10
Hislop Loop, Black River.....		1,996.37	1,996.37
Sideroads 3 and 4, Playfair Township....		498.75	498.75
Sideroads 6 and 7, Mountjoy Township....	29,656.01		29,656.01
North Road of Carr, Black River.....		21,994.61	21,994.61
Boyd's Road, Calvert.....		9,651.54	9,651.54
	\$6,193,393.78	\$1,424,439.67	\$7,617,833.45
Haliburton:			
Highway No. 28.....	\$ 5,508.58	\$ 14,551.28	\$ 20,059.86
" " 35.....	26,472.30	83,287.92	109,760.22
" " 60.....	572.97	226,774.22	227,347.19
" " 109.....	547,029.19		547,029.19
" " 111.....	376,973.57		376,973.57
" " 121.....	371,121.85	75,285.70	446,407.55
Secondary Road No. 500.....	534,591.09	110,822.83	645,413.92
" " " 519.....	40,457.04	161,197.88	201,654.92

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Haliburton (Cont'd):			
Secondary Road No. 530.....	\$ 1,078.62	\$ 41,972.15	\$ 43,050.77
Bicroft Mine Road.....	2,396.78		2,396.78
Miscellaneous Surveys.....	6,690.78		6,690.78
Development Roads:			
Fletcher Lake Road.....	36,191.67		36,191.67
Highland Grove-Kidd's Corner.....	26,528.19		26,528.19
Kushog Lake Road.....	37,077.94		37,077.94
Horshoe Lake Road.....	31,451.73		31,451.73
Gooderham-Haliburton.....	445.99		445.99
	\$2,044,588.29	\$ 713,891.98	\$2,758,480.27
Kenora:			
Highway No. 17.....	\$3,275,065.35	\$ 356,015.22	\$3,631,080.57
" " 70.....	11,334.02	87,758.82	99,092.84
" " 72.....	39,579.81	109,169.04	148,748.85
" " 105.....	491,964.51	333,266.25	825,230.76
" " 116.....	10,818.79	17,745.75	28,564.54
" " 119.....	3,907.17	35,383.45	39,290.62
" " 125.....	9.76	23,272.18	23,281.94
" " 128.....	2,495.28	31,679.33	34,174.61
Secondary Road No. 594.....	2,867.18	31,562.23	34,429.41
" " 596.....	50.11	30,355.62	30,405.73
" " 598.....		3,681.92	3,681.92
" " 599.....	2,689.97	44,804.74	47,494.71
" " 601.....	11,026.62	23,178.34	34,204.96
" " 603.....		4,770.02	4,770.02
" " 604.....	2,462.99	19,491.52	21,954.51
" " 605.....	8,877.17	17,409.37	26,286.54
" " 609.....		10,756.28	10,756.28
" " 618.....		15,234.40	15,234.40
Miscellaneous Surveys.....	1,811.16		1,811.16
Connecting Link:			
Town of Kenora.....		16,874.92	16,874.92
Unincorporated Township Roads:			
Aubrey East.....		1,554.55	1,554.55
Boys.....		502.35	502.35
Britton.....	5,031.28	2,228.34	7,259.62
Colenso.....		355.56	355.56
Devonshire.....		173.32	173.32
Drayton.....		140.07	140.07
Drayton Reserve.....		931.87	931.87
Eton.....	2,975.62	2,926.39	5,902.01
Ewart.....	12,258.29		12,258.29
Gidley.....		447.31	447.31
Indian Reserve No. 27.....		577.40	577.40
Kirkup.....		435.29	435.29
Melgund.....	4,805.08	4,163.98	8,969.06
Mutrie.....	5,254.84	4,072.44	9,327.28
North of Buller.....		2,375.76	2,375.76
Pellatt.....	3,363.21	3,303.24	6,666.45
Redditt.....	1,980.82	3,586.06	5,566.88
Redvers.....	1,728.61	965.22	2,693.83
Rowell.....		1,888.60	1,888.60
Rugby.....		3,471.11	3,471.11
Smellie.....		19.34	19.34
South of Pellatt.....	1,418.35	1,231.65	2,650.00
Southworth.....	1,982.72	1,725.05	3,707.77
Van Horne.....		3,441.10	3,441.10
Vermilion Additional.....		988.34	988.34
Wabigoon.....	1,728.61	965.23	2,693.84
Wainright.....		2,415.06	2,415.06
Zealand.....	17,303.31	11,059.70	28,363.01
Development Roads:			
Anderson Loop.....	7,161.87		7,161.87

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Hammell Forestry Road.....	\$ 2,189.56	\$	\$ 2,189.56
	\$3,934,142.06	\$1,268,353.73	\$5,202,495.79
Muskoka:			
Highway No. 11.....	968,754.82	98,626.51	1,067,381.33
" " 35.....	291,475.24	34,849.23	326,324.47
" " 60.....	36,694.17	121,776.18	158,470.35
" " 69.....	72,185.07	49,983.32	122,168.39
" " 103.....	1,975,689.26	39,498.02	2,015,187.28
" " 118.....	322,842.35	94,919.24	417,761.59
" " 400.....	7,005.65	.....	7,005.65
Secondary Road No. 501.....	9,558.37	29,969.81	39,528.18
" " " 514.....	.....	29,964.50	29,964.50
" " " 516.....	.....	21,430.64	21,430.64
" " " 525.....	.....	2,024.35	2,024.35
" " " 527.....	.....	21,462.83	21,462.83
" " " 532.....	40,547.22	51,550.41	92,097.63
Miscellaneous Surveys.....	1,619.09	.....	1,619.09
Sidewalk:			
Dorset.....	191.70	.....	191.70
Connecting Links:			
Town of Bracebridge.....	.....	1,602.64	1,602.64
Town of Gravenhurst.....	.....	3,346.08	3,346.08
Town of Huntsville.....	.....	4,044.81	4,044.81
Village of Port Carling.....	.....	4,141.38	4,141.38
Unincorporated Township Roads:			
Baxter.....	.....	6,101.48	6,101.48
Gibson.....	.....	2,868.73	2,868.73
Sinclair.....	.....	2,168.43	2,168.43
Development Roads:			
Huntsville-Rosseau Road.....	47,137.38	.....	47,137.38
Brackenrig Road.....	37,340.47	.....	37,340.47
Gibson Twp.....	53.25	.....	53.25
	\$3,811,094.04	\$ 620,328.59	\$4,431,422.63
Nipissing:			
Highway No. 11.....	\$ 348,768.00	\$ 142,013.31	\$ 490,781.31
" " 11B.....	6,323.88	13,309.11	19,632.99
" " 17.....	1,174,269.53	206,970.83	1,381,240.36
" " 60.....	30,939.15	181,114.97	212,054.12
" " 63.....	11,463.93	71,631.76	83,095.69
" " 64.....	139,796.39	188,266.10	328,062.49
" " 94.....	13,679.94	13,679.94	13,679.94
" " 127.....	138,780.59	37,199.11	175,979.70
Secondary Road No. 523.....	.....	29,594.95	29,594.95
" " " 528.....	.....	3,209.32	3,209.32
" " " 531.....	.....	3,119.00	3,119.00
" " " 533.....	28,091.29	52,394.92	80,486.21
" " " 539.....	206.88	57,389.47	57,596.35
" " " 539A.....	2,657.53	796.29	3,453.82
North Bay Airport Road.....	.....	9,788.01	9,788.01
Miscellaneous Surveys.....	186.69	.....	186.69
Connecting Link:			
Town of Sturgeon Falls.....	.....	4,328.01	4,328.01
Unincorporated Township Roads:			
Airy.....	.....	2,489.75	2,489.75
Dickens.....	.....	1,388.57	1,388.57
Murchison.....	.....	816.92	816.92
Sabine.....	.....	3,590.07	3,590.07
Badgerow.....	.....	5,394.72	5,394.72
Bastedo.....	.....	461.64	461.64
Boulter.....	.....	34.75	34.75
Clement.....	.....	463.66	463.66
Crerar.....	.....	3,916.80	3,916.80

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing (Cont'd):			
Dana.....	\$	\$ 653.45	\$ 653.45
Doris Indian Reserve.....	.....	3,442.79	3,442.79
Falconer.....	.....	8,793.07	8,793.07
Gibbons.....	.....	3,596.22	3,596.22
Gladman.....	.....	53.00	53.00
Grant.....	.....	2,779.61	2,779.61
Hugel.....	7,874.96	4,709.93	12,584.89
Kirkpatrick.....	2,839.23	7,109.92	9,949.15
Latchford.....	.....	1,257.05	1,257.05
Lauder.....	11,291.34	1,894.97	13,186.31
Loudon.....	.....	87.66	87.66
MacPherson.....	2,839.22	11,083.07	13,922.29
Pardo.....	.....	92.74	92.74
Pentland.....	.....	99.73	99.73
Phelps.....	.....	4,016.85	4,016.85
Poitras.....	.....	2.10	2.10
Wyse.....	.....	18.90	18.90
Strathy.....	.....	42.19	42.19
Development Roads:			
Booth Track.....	4,830.62	.....	4,830.62
Concession 16, Chisholm Township.....	.....	7,991.28	7,991.28
Cache Bay-Caderette.....	23,369.79	.....	23,369.79
Main Street, Verner.....	14,616.24	.....	14,616.24
Burches Road West, Ferris Township.....	64,167.63	.....	64,167.63
Kiosk Road, Calvin Township.....	36,107.91	.....	36,107.91
	\$2,049,420.80	\$1,091,086.51	\$3,140,507.31
Parry Sound:			
Highway No. 11.....	\$ 709,167.04	\$ 151,323.95	\$ 860,490.99
“ “ 69.....	2,260,302.06	209,693.96	2,469,996.02
“ “ 94.....	.....	1,199.95	1,199.95
“ “ 124.....	202,129.11	122,645.07	324,774.18
Secondary Road No. 510.....	.....	2,591.86	2,591.86
“ “ “ 518.....	90,425.69	141,137.78	231,563.47
“ “ “ 520.....	4.50	104,568.16	104,572.66
“ “ “ 522.....	201,965.63	144,312.80	346,278.43
“ “ “ 524.....	.....	12,697.96	12,697.96
“ “ “ 526.....	.....	5,603.42	5,603.42
“ “ “ 529.....	.....	6,791.17	6,791.17
“ “ “ 532.....	206,352.03	51,213.98	257,566.01
“ “ “ 534.....	22.61	61,083.16	61,105.77
Miscellaneous Survey.....	36.83	.....	36.83
Connecting Link:			
Town of Parry Sound.....	.....	484.86	484.86
Unincorporated Township Roads:			
Bethune.....	3,485.84	7,141.54	10,627.38
Burpee.....	1,735.18	3,853.29	5,588.47
Conger.....	3,446.85	3,761.02	7,207.87
Croft.....	6,981.54	9,488.23	16,469.77
Ferguson.....	4,977.43	3,888.40	8,865.83
Ferrie.....	.....	328.77	328.77
Gurd.....	1,882.28	11,920.51	13,802.79
Hardy.....	2,472.73	7,214.49	9,687.22
Harrison.....	2,008.28	1,340.94	3,349.22
Henvey.....	.....	2,669.70	2,669.70
Laurier.....	7,924.17	8,036.37	15,960.54
Lount.....	4,956.81	6,685.94	11,642.75
McConkey.....	984.94	3,607.79	4,592.73
McKenzie.....	1,735.18	3,853.29	5,588.47
Mills.....	2,472.72	7,214.48	9,687.20
Monteith.....	1,491.25	3,409.59	4,900.84
Mowat.....	.....	1,219.90	1,219.90
Patterson.....	2,992.93	5,049.47	8,042.40
Pringle.....	4,987.48	8,881.89	13,869.37

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Proudfoot.....	\$ 2,438.03	\$ 3,481.56	\$ 5,919.59
Shawnaga.....		349.25	349.25
Spence.....	2,994.68	9,847.38	12,842.06
Wallbridge.....	6,880.66	12,007.48	18,888.14
Wilson.....	984.93	3,607.79	4,592.72
Development Roads:			
Eagle Lake Road.....	40,115.76		40,115.76
Lighthouse Beach Road.....	29,681.12		29,681.12
Bernard Lake Road.....	8,194.59		8,194.59
Booth Track Road.....	1,207.65		1,207.65
Wades Landing Road.....	14,685.26		14,685.26
Concession 12, South Himsworth Township.....	35,644.80		35,644.80
Balsam Lake Road.....	15,326.09		15,326.09
McDougall Road.....	29,165.94		29,165.94
	\$3,912,260.62	\$1,144,207.15	\$5,056,467.77
Rainy River:			
Highway No. 70.....	\$ 217.95	\$ 48,813.58	\$ 49,031.53
" " 71.....	1,485,077.37	78,946.23	1,564,023.60
" " 120.....	711,108.57	55,278.30	766,386.87
Secondary Road No. 592.....		5,257.80	5,257.80
" " " 600.....	202.86	67,417.46	67,620.32
" " " 602.....	24,023.22	56,255.88	80,279.10
" " " 611.....		16,812.99	16,812.99
" " " 613.....	7,806.37	55,713.48	63,519.85
" " " 615.....	14,322.84	36,651.91	50,974.75
" " " 617.....		32,173.51	32,173.51
" " " 619.....		40,326.12	40,326.12
" " " 621.....	73,016.72	71,137.36	144,154.08
" " " 622.....	54,294.02	16,534.10	70,828.12
" " " 623.....		24,864.21	24,864.21
Miscellaneous Surveys.....	59,703.54		59,703.54
Connecting Link:			
Town of Fort Frances.....		41,160.56	41,160.56
Unincorporated Township Roads:			
Dance.....		1,898.91	1,898.91
Dewart.....	3,885.05	2,347.13	6,232.18
Indian Reserve No. 17A.....		672.05	672.05
Indian Reserve No. 18B.....		97.27	97.27
Miscampbell.....		2,065.41	2,065.41
Nelles.....		4,126.48	4,126.48
North of Fleming.....		247.27	247.27
Sifton.....	1,953.61	3,826.87	5,780.48
Spohn.....		1,168.28	1,168.28
Sutherland.....		330.59	330.59
Development Roads:			
Concession 2 Burriss.....	6,738.28		6,738.28
Saturn Avenue Extension, Atikokan.....	Cr. 515.13		Cr. 515.13
Sheneton-Dobie.....	822.40		822.40
	\$2,442,657.67	\$ 664,123.75	\$3,106,781.42
Sudbury:			
Highway No. 17.....	\$ 366,863.20	\$ 371,819.20	\$ 738,682.40
" " 64.....	96,334.70	59,430.95	155,765.65
" " 68.....	918,361.30	60,297.00	978,658.30
" " 69.....	73,835.99	170,524.59	244,360.58
" " 129.....	513,072.83	86,931.72	600,004.55
Secondary Road No. 528.....		22,144.36	22,144.36
" " " 528A.....		10,092.66	10,092.66
" " " 535.....	102,008.79	87,614.63	189,623.42
" " " 536.....	55.82	7,638.81	7,694.63
" " " 537.....	6,158.59	37,010.89	43,169.48
" " " 539.....	180.29	10,672.94	10,853.23

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Secondary Road No. 541.....	\$ 194,632.20	\$ 43,970.51	\$ 238,602.71
" " " 543.....	143,213.83	8,140.13	151,353.96
" " " 544.....	569,580.39	158,484.46	728,064.85
" " " 545.....	26,538.81	40,718.27	67,257.08
" " " 547.....	1,592.00	1,731.35	3,323.35
" " " 549.....	11,391.80	29,217.67	40,609.47
" " " 553.....	3,779.69	10,270.80	14,050.49
" " " 560.....	20,972.22	98,808.48	119,780.70
" " " 606.....	102,401.68	1,647.52	104,049.20
" " " 607.....	15.97	23,570.85	23,586.82
" " " 607A.....		1,181.08	1,181.08
" " " 616.....	20,582.48	33,960.96	54,543.44
" " " 624.....	446.71	13,218.80	13,665.51
Burwash-Killarney.....	239.50		239.50
Miscellaneous Surveys.....	25,249.21		25,249.21
Sidewalks:			
Capreol Township.....	1,879.47		1,879.47
Neelon and Garson Townships.....	1,486.79		1,486.79
Noelville.....	968.03		968.03
Casimir, Appleby, Jennings Twp.....	388.61		388.61
Unincorporated Township Roads:			
Afton.....		185.50	185.50
Bigwood.....		5,572.40	5,572.40
Davis.....		244.69	244.69
Delamere.....	2,831.89	4,169.01	7,000.90
Hoskin.....	314.65	767.77	1,082.42
Haddo.....		297.74	297.74
Henry.....		1,332.68	1,332.68
Janes.....		738.37	738.37
McNish.....	2,278.74	463.66	2,742.40
Scollard.....	4,758.38	1,849.77	6,608.15
Noble.....	2,500.00		2,500.00
Togo.....	2,500.00		2,500.00
Awrey.....		186.25	186.25
Broder.....	10,067.15	7,904.40	17,971.55
Burwash.....		3,205.08	3,205.08
Cascaden.....		300.00	300.00
Cleland.....		3,267.87	3,267.87
Curtin.....		58.38	58.38
Dieppe.....		269.89	269.89
Dill.....		1,782.97	1,782.97
Dryden.....		1,680.66	1,680.66
Eden.....		371.19	371.19
Fairbank.....		750.31	750.31
Foster.....		2,233.93	2,233.93
Hawley.....		289.04	289.04
Hendrie.....		417.20	417.20
Lorne.....	1,319.35	3,954.13	5,273.48
Loughrin.....		3,003.34	3,003.34
Louise.....		4,522.25	4,522.25
MacLennan.....		2,643.58	2,643.58
Merritt.....		1,605.55	1,605.55
Secord.....		1,531.39	1,531.39
Snider.....		241.84	241.84
Tilton.....		103.73	103.73
Trill.....		18.00	18.00
McKinnon.....		248.00	248.00
Salter Broken Front.....		49.99	49.99
Shakespeare.....		1,706.25	1,706.25
Development Roads:			
Bancroft Drive.....	63,425.22		63,425.22
Long Lake Road.....		9,909.13	9,909.13
Warren-St. Charles.....		22,686.09	22,686.09
	\$3,292,226.28	\$1,479,660.66	\$4,771,886.94

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming:			
Highway No. 11.....	\$ 193,483.29	\$ 139,854.56	\$ 333,337.85
" " 65.....	374,392.37	194,724.63	569,117.00
" " 66.....	391,911.40	119,312.38	511,223.78
" " 101.....	21,508.61	9,821.70	31,330.31
" " 112.....	89,198.54	13,485.16	102,683.70
Secondary Road No. 558.....	16,321.96	33,355.70	49,677.66
" " " 560.....	38,333.93	133,790.56	172,124.49
" " " 562.....	8,915.98	21,440.80	30,356.78
" " " 564.....	4,635.70	11,412.95	16,048.65
" " " 566.....	2,260.21	31,949.47	34,209.68
" " " 567.....	.....	37,781.12	37,781.12
" " " 568.....	.....	1,218.41	1,218.41
" " " 569.....	.....	30,419.56	30,419.56
" " " 570.....	.....	3,821.65	3,821.65
" " " 571.....	3,636.80	9,592.39	13,229.19
" " " 573.....	3,652.63	17,762.45	21,415.08
" " " 616.....	.....	10,116.48	10,116.48
Miscellaneous Surveys.....	9.77	.....	9.77
Sidewalk:			
Bucke Township.....	1,455.00	.....	1,455.00
Connecting Links:			
Town of Cobalt.....	.....	748.82	748.82
Town of Haileybury.....	.....	85.25	85.25
Town of New Liskeard.....	.....	3,041.15	3,041.15
Unincorporated Township Roads:			
Barber.....	.....	415.58	415.58
Bayly.....	.....	1,161.87	1,161.87
Beauchamp.....	5,017.18	5,615.12	10,632.30
Benoit.....	.....	1,231.51	1,231.51
Blain.....	.....	1,775.18	1,775.18
Bryce.....	.....	769.69	769.69
Cane.....	.....	3,781.10	3,781.10
Catherine.....	2,494.84	2,426.94	4,921.78
Eby.....	.....	1,922.55	1,922.55
Gillies.....	.....	217.40	217.40
Grenfell.....	.....	1,250.68	1,250.68
Henwood.....	6,805.60	8,834.08	15,639.68
Ingram.....	1,451.43	5,423.92	6,875.35
Keefer.....	.....	3,147.69	3,147.69
Lebel.....	.....	1,055.15	1,055.15
Lorrain.....	.....	577.00	577.00
Maisonville.....	.....	1,231.50	1,231.50
Marquis.....	2,785.98	12,807.40	15,593.38
Marter.....	2,215.51	11,474.40	13,689.91
McFadden.....	.....	287.00	287.00
Ossian.....	.....	739.89	739.89
Otto.....	940.92	5,487.29	6,428.21
Pacaud.....	.....	6,632.16	6,632.16
Pense.....	.....	2,961.27	2,961.27
Robillard.....	.....	7,790.30	7,790.30
Savard.....	.....	3,733.46	3,733.46
Sharpe.....	.....	5,497.17	5,497.17
Tudhope.....	.....	715.13	715.13
Development Roads:			
Larder Lake, southerly.....	4,998.50	.....	4,998.50
Twin Lake to Highway No. 65.....	9,526.11	.....	9,526.11
Marter Boundary to Highway No. 11.....	15,913.28	.....	15,913.28
Goodfish Road.....	6,990.95	.....	6,990.95
Bucke-Firstbrooke Boundary.....	.....	14,989.90	14,989.90
Chamberlain-Pacaud Boundary.....	.....	9,908.25	9,908.25
Cheminis Station to Highway No. 66.....	34,095.79	.....	34,095.79
	\$1,242,952.28	\$ 947,595.77	\$2,190,548.05

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay:			
Highway No. 11.....	\$ 225,796.31	\$ 311,459.41	\$ 537,255.72
Highway No. 17.....	7,114,467.76	534,687.50	7,649,155.26
" " 17A.....	16,211.53	53,861.96	70,073.49
" " 61.....	6,958.27	72,371.58	79,329.85
" " 120.....	987,061.01	70,413.08	1,057,474.09
" " 130.....	128,777.75	56,160.12	184,937.87
Secondary Road No. 580.....	36,338.12	4,891.10	41,229.22
" " 582.....	2,189.73	9,746.60	11,936.33
" " 584.....	60,551.65	36,443.21	96,994.86
" " 585.....	13,918.28	80,119.01	94,037.29
" " 586.....	4,007.26	5,324.67	9,331.93
" " 587.....	7,262.09	42,020.89	49,282.98
" " 588.....	46,571.47	79,348.28	125,919.75
" " 589.....	574.72	38,373.81	38,948.53
" " 590.....	11,996.84	84,742.78	96,739.62
" " 591.....	392.44	9,986.41	10,378.85
" " 593.....	23,941.21	18,970.36	42,911.57
" " 595.....	10,895.48	77,825.23	88,720.71
" " 597.....	236.90	10,204.79	10,441.69
" " 599.....	.....	112,790.96	112,790.96
" " 608.....	1,068.36	18,003.23	19,071.59
" " 614.....	195,127.03	55,305.00	250,432.03
" " 625.....	5,974.61	16,209.01	22,183.62
" " 627.....	84,221.06	7,234.71	91,455.77
Heron Bay Access Road.....	1,225.00	.....	1,225.00
Geraldton Cut-off.....	37,136.57	3,559.87	40,696.44
Kashabowie Road.....	420.00	.....	420.00
Miscellaneous Surveys.....	1,786.48	.....	1,786.48
Connecting Link:			
City of Port Arthur.....	37,438.10	.....	37,438.10
Unincorporated Township Roads:			
Armstrong.....	.....	1,912.89	1,912.89
Connacher.....	.....	4.28	4.28
Dawson Road Lots.....	1,585.08	478.32	2,063.40
Devon.....	2,989.30	2,857.79	5,847.09
Forbes.....	2,493.59	4,625.75	7,119.34
Fowler.....	.....	5,221.67	5,221.67
Goldie.....	.....	2,352.25	2,352.25
Gorham.....	8,234.51	11,536.54	19,771.05
Hardwick.....	.....	1,679.88	1,679.88
Jacques.....	.....	3,349.00	3,349.00
Jackfish.....	.....	451.00	451.00
Kilkenny.....	.....	2,067.80	2,067.80
Lindsley.....	.....	100.00	100.00
Lybster.....	2,460.00	2,920.76	5,380.76
Lyons.....	.....	2,186.50	2,186.50
Marks.....	.....	5,818.50	5,818.50
Pearson.....	1,922.70	4,463.86	6,386.56
Pic.....	.....	60.74	60.74
Rosspport.....	.....	1,316.54	1,316.54
Scoble.....	.....	4,396.95	4,396.95
Sibley.....	.....	4,141.40	4,141.40
Sterling.....	2,481.57	.....	2,481.57
Strange.....	.....	2,671.61	2,671.61
Upsala.....	.....	4,273.78	4,273.78
Ware.....	4,474.56	10,579.77	15,054.33
West of McTavish (Unsurveyed).....	.....	153.46	153.46
Development Roads:			
North-South Road, Pardee.....	14,443.71	.....	14,443.71
Concession 1, Paipoonge Twp.....	2,107.79	.....	2,107.79
Mountain Road.....	28,856.70	.....	28,856.70
Sturgeon Bay Road.....	10,674.06	.....	10,674.06
John Street Road, Oliver Twp.....	16,383.39	.....	16,383.39
Side Road 20/21, Neebing Twp.....	9,557.85	.....	9,557.85
Red Rock Road.....	29,872.50	.....	29,872.50
John Street, McIntyre.....	4,158.21	.....	4,158.21

	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Fourth Concession, O'Connor Twp.....	\$ 24,897.58	\$ 2,819.19	\$ 27,716.77
Sideroad 2/3, Connree Twp.....	5,762.97	.....	5,762.97
Brunner Road, Dorion I.D.....	.....	14,250.14	14,250.14
	\$9,235,902.10	\$1,906,743.94	\$11,142,646.04
COUNTY AND DISTRICT TOTAL.....	\$135,013,633.73	\$32,142,522.76	\$167,156,156.49
Sundry Unallocated District Office			
Administrative, Engineering, Building,			
Inventory Charges, etc.....	\$2,253,627.65	\$5,126,907.00	\$7,380,534.65
TOTAL EXPENDITURE.....	\$137,267,261.38	\$37,269,429.76	\$174,536,691.14

APPENDIX No. 2

DEPARTMENT EXPENDITURES BY HIGHWAYS

April 1, 1958 to March 31, 1959

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
King's Highways					
2	Windsor-Quebec Boundary.....	542.2	\$3,999,626.67	\$1,340,470.81	\$5,340,097.48
2A	Florimac-Jct. Hwy. 401 and Hwy. No. 2.....	3.2	695.52	8,675.24	9,370.76
3	Windsor-Fort Erie.....	260.0	661,366.49	618,914.14	1,280,280.63
3A	Chambers Corners-Niagara Falls.....	24.8	3,775.78	37,411.21	41,186.99
3B	Jct. Hwy. No. 3-Windsor.....	6.0	4,843.54	7,208.45	12,051.99
3C	Ridgeway-Fort Erie.....	7.5	4,717.01	28,227.45	32,944.46
4	Port Stanley-Flesherton.....	155.5	193,046.36	385,481.06	578,527.42
5	Toronto-Paris (Via Dundas Street).....	65.6	2,088,681.82	204,156.66	2,292,838.48
6	Port Dover-Tobermory.....	225.1	1,779,824.51	852,803.98	2,632,628.49
7	Sarnia-Perth.....	403.6	3,940,145.57	921,257.96	4,861,403.53
7A	Manchester-Peterborough.....	41.3	61,069.48	56,462.70	117,532.18
7B	Alternate Route, Lindsay.....	2.5	4,343.04	4,343.04	8,686.08
8	Niagara Falls-Goderich.....	155.7	652,170.71	278,850.87	931,021.58
8A	St. Davids-Queenston.....	2.6	787.14	8,748.24	9,535.38
9	Schomberg-Kincardine.....	112.8	664,525.42	284,111.47	948,636.89
10	Port Credit-Owen Sound.....	105.0	1,104,524.50	277,046.12	1,381,570.62
11	Toronto-Nipigon.....	851.0	9,189,281.18	1,904,951.67	11,094,232.85
11B	Alternate Routes, North Bay and Orillia.....	8.9	6,477.05	13,309.11	19,786.16
12	Whitby-Midland and Penetang.....	99.1	1,095,838.12	306,184.90	1,402,023.02
12B	Alternate Route, Orillia.....	2.0	149.47	.....	149.47
14	Pictou-Marmora.....	51.4	67,119.49	158,760.30	225,879.79
15	Ottawa-Kingston.....	131.0	1,323,489.53	266,603.60	1,590,093.13
15A	Stittsville-Ashton.....	9.4	1,294.22	24,381.01	25,675.23
16	Ottawa-Johnstown Corners.....	58.9	41,225.72	120,709.03	161,934.75
17	Quebec Boundary-Manitoba Boundary.....	1208.6	22,568,952.15	2,615,773.85	25,184,726.00
17A	Port Arthur-Hwy. No. 17.....	21.0	16,211.53	53,861.96	70,073.49
17B	Alternate Route, Quebec Boundary-Ottawa.....	49.0	203,688.38	95,090.69	298,779.07
18	Leamington-Windsor.....	49.0	48,865.88	64,573.12	113,439.00
18A	Kingsville-Hwy. No. 18.....	20.0	2,667.40	21,988.17	24,655.57
19	Port Burwell-Tralee.....	92.2	671,523.84	556,983.06	1,228,506.90
20	Niagara Falls-Burlington.....	53.3	683,747.85	158,552.66	842,300.51
21	Morpeth-Owen Sound.....	207.0	1,121,222.36	407,239.65	1,528,462.01
22	London-Sarnia.....	61.5	1,191,359.68	47,071.02	1,238,430.70
23	Elginfield-Teviotdale.....	60.6	56,273.71	142,695.65	198,969.36
24	Port Dover-Collingwood.....	143.4	288,591.80	415,905.57	704,497.37
24A	Paris-Galt.....	13.1	99.40	31,700.66	31,800.06
25	Queen Elizabeth Way-Acton.....	27.3	741,652.15	76,024.42	817,676.57
26	Barrie-Owen Sound.....	74.6	19,226.57	173,113.63	192,340.20
27	Long Branch-Penetang- Midland.....	91.8	2,194,008.87	391,971.44	2,585,980.31
28	Port Hope-Bancroft.....	95.9	600,798.53	196,947.34	797,745.87
29	Brockville-Arncliffe.....	76.4	567,041.19	161,325.72	728,366.91
30	Brighton-Havelock.....	32.0	7,482.77	219,769.11	227,251.88
31	Morrisburg-Ottawa.....	48.4	107,224.14	89,450.34	196,674.48
32	Gananoque-Hwy. No. 15.....	12.4	21,701.18	45,617.18	67,318.36
33	Kingston-Stirling.....	87.4	180,650.01	190,764.64	371,414.65
34	Lancaster-Hawkesbury.....	38.1	10,105.73	75,806.70	85,912.43
35	Newcastle-Huntsville.....	136.1	630,499.13	359,230.99	989,730.12
35A	Hwy. No. 35-Fenelon Falls.....	2.2	2,294.40	4,298.96	6,593.36
35B	Lindsay.....	.....	.....	4,517.60	4,517.60
36	Hwy. No. 7-Burleigh Falls.....	45.4	269,411.10	110,371.56	379,782.66
36B	Lindsay.....	.....	.....	3,574.50	3,574.50

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
37	Belleville-Actinolite.....	29.3	\$ 36,951.64	\$ 88,030.28	\$ 124,981.92
38	Cataraqui-Hwy. No. 7.....	43.8	134,540.13	122,932.96	257,473.09
39	Windsor-Belle River.....	21.5	773,079.80	21,659.37	794,739.17
40	Sarnia-Chatham.....	50.1	34,618.18	70,318.34	104,936.52
41	Pictou-Napanee-Pembroke.....	145.1	392,207.19	288,421.91	680,629.10
42	Forthton-Westport.....	34.0	13,647.51	79,967.36	93,614.87
43	Alexandria-Hwy. No. 31.....	38.7	547,108.49	77,055.55	624,164.04
44	Almonte-Hwy. No. 17.....	14.0	6,121.73	24,869.04	30,990.77
45	Cobourg-Norwood.....	33.0	280,620.79	58,172.62	338,793.41
46	Hwy. No. 7-Kirkfield- Hwy. No. 35.....	34.0	266,264.53	70,232.82	336,497.35
47	Hwy. No. 12-Uxbridge- Hwy. No. 48.....	20.5	19,235.29	90,508.50	109,743.79
48	Hwy. No. 401-Beaverton.....	51.2	677,758.51	220,579.08	898,337.59
49	Kleinburg-Hwy. No. 50.....	3.5	256,733.11	9,996.24	266,729.35
50	Hwy. No. 7-Bolton- Hwy. No. 9.....	18.0	13,947.54	72,595.86	86,543.40
51	Hwy. No. 24-Caledon.....	2.5	301,890.68	9,450.35	311,341.03
52	Hwy. No. 97-Peters Corners- Hwy. No. 2.....	18.5	6,992.92	58,857.03	65,849.95
53	Eastwood-Hwy. No. 20.....	48.9	237,938.60	100,817.09	338,755.69
54	Cainsville-Cayuga.....	27.0	28,980.95	84,974.12	113,955.07
55	Hwy. No. 53-Hamilton.....	4.0	9,763.82	5,249.89	15,013.71
56	Jct. Hwy. No. 53 and 20-Canfield.....	15.5	2,780.10	63,157.19	65,937.29
57	Bismark-Hwy. No. 3A.....	9.0	4,993.64	24,906.48	29,900.12
58	St. Catharines-Port Colborne.....	24.0	12,307.31	72,102.82	84,410.13
59	Woodstock-Delhi.....	26.5	8,919.77	70,941.02	79,860.79
60	Huntsville-Egansville.....	132.7	535,021.63	657,638.02	1,192,659.65
61	Port William-International Boundary.....	42.9	6,958.27	72,371.58	79,329.85
62	Madoc-Pembroke.....	118.0	302,235.47	226,580.55	528,816.02
63	North Bay-Timiskaming.....	41.0	11,463.93	71,631.76	83,095.69
64	Hwy. No. 69-Marten River.....	91.9	236,131.09	247,697.05	483,828.14
65	Matachewan-New Liskeard- Quebec Boundary.....	80.7	374,392.37	194,724.63	569,117.00
66	Matachewan-Kirkland Lake- Quebec Boundary.....	62.7	391,911.40	119,312.38	511,223.78
67	Iroquois Falls-Hwy. No. 101.....	23.3	13,743.30	51,638.10	65,381.40
68	South Baymouth-Hwy. No. 17.....	77.2	1,142,864.41	345,343.87	1,488,208.28
69	Brechin-Parry Sound-Capreol.....	197.4	2,408,231.76	501,120.50	2,909,352.26
70	Longbow Corners-Hwy. No. 71.....	100.7	11,551.97	136,572.40	148,124.37
71	Fort Frances-Rainy River.....	58.9	1,485,077.37	78,946.23	1,564,023.60
72	Dinorwic-Sioux Lookout.....	48.0	39,579.81	109,169.04	148,748.85
73	Port Bruce-Dorchester Road.....	23.0	105.12	46,656.80	46,761.92
74	New Sarum-Nilestown.....	14.0	10,718.82	23,549.71	34,268.53
75	Wallacetown-Dutton.....	2.5	29,809.25	4,077.48	33,886.73
76	Eagle-Hwy. No. 2.....	11.4	27,046.85	13,569.29	40,616.14
77	New Glasgow-Rodney.....	4.0	36,462.54	5,243.12	41,705.66
78	Wallaceburg-Dresden.....	10.5	10,499.76	13,856.31	24,356.07
79	Hwy. No. 2-Hwy. No. 7.....	28.9	11,704.13	33,751.08	45,455.21
80	Hwy. No. 2-Alvinston.....	13.0	16,777.33	42,031.81	58,809.14
81	Delaware-Grand Bend.....	44.0	108,300.98	108,227.96	216,528.94
82	Hwy. No. 7-Port Franks.....	7.0	4,954.08	65,195.11	70,149.19
83	Hwy. No. 21-Hwy. No. 23.....	24.0	15,946.24	53,873.31	69,819.55
84	St. Joseph-Hensall.....	10.5	38,025.43	23,650.75	61,676.18
85	Kitchener-Elmira.....	12.0	1,718.11	19,890.83	21,608.94
86	Amberley-Hwy. No. 7.....	79.0	768,310.15	252,715.27	1,021,025.42
87	Bluevale-Harriston.....	19.5	3,563.18	44,326.94	47,890.12
88	Bondhead-Bradford.....	6.0	6,770.36	20,536.22	27,306.58
89	Primrose-Cookstown.....	23.5	16,014.49	67,220.49	83,234.98
90	Angus-Barrie.....	12.6	168,907.83	40,946.00	209,853.83
91	Duntroon-Stayner.....	5.2	26,562.13	26,562.13	53,124.26
92	Elmvale-Wasaga Beach.....	9.0	3,556.42	35,390.45	38,946.87
93	Crown Hill-Waverley.....	17.5	10,229.50	94,806.47	105,035.97
94	Callander-Hwy. No. 17.....	6.5	14,879.89	14,879.89	29,759.78

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
95	Wolfe Island Road.....	7.0	\$ 27,511.73	\$ 14,268.85	\$ 41,780.58
96	Wolfe Island Road.....	20.0	8,651.50	39,105.68	47,757.18
97	Hickson-Freelton.....	43.1	43,685.78	145,038.36	188,724.14
98	Windsor-Blenheim.....	58.7	1,865,281.79	68,908.87	1,934,190.66
99	Dundas-Hwy. No. 24.....	16.5	4,873.81	68,040.43	72,914.24
100	Thamesford-Hwy. No. 7.....	16.0	14,971.59	71,037.36	86,008.95
101	Warren Lake-Quebec Boundary	117.3	592,083.84	190,107.34	782,191.18
102	Hwy. No. 2-Dundas.....	2.2	4,401.66	11,317.85	15,719.51
103	Waubausheene-Footes Bay.....	30.8	2,238,081.15	55,904.67	2,293,985.82
104	Hwy. No. 9-Grand Valley.....	1.9		4,546.95	4,546.95
105	Hwy. No. 17-Red Lake.....	111.9	491,964.51	333,266.25	825,230.76
106	Welcome-Dale.....	2.7	15,098.54	8,327.10	23,425.64
107	Ruthven-Hwy. No. 18.....	1.0	299.89	1,285.77	1,585.66
108	Hwy. No. 17-Quirke Lake.....	26.1	675,670.97	43,405.73	719,076.70
109	Sec. Road No. 500-Hwy. No. 28.....	14.4	547,402.13	6,014.53	553,416.66
110	Hwy. No. 15-Hwy. No. 29.....	1.8		2,693.83	2,693.83
111	Dyno Mines-Sec. Road No. 500	7.8	376,973.57		376,973.57
112	Hwy. No. 11-Hwy. No. 66.....	12.6	89,198.54	13,485.16	102,683.70
114	Hwy. No. 98-Hwy. No. 3.....	1.2	1,322.69	1,367.44	2,690.13
115	Hwy. No. 35-Hwy. No. 28.....	16.7	73,592.25	17,809.88	91,402.13
116	Patricia-Hudson.....	10.0	10,818.79	17,745.75	28,564.54
118	Glen Orchard-Dorset.....	53.3	322,842.35	94,919.24	417,761.59
119	Hwy. No. 17-Richan.....	13.9	3,907.17	35,383.45	39,290.62
120	Hwy. No. 17-Atikokan.....	87.7	1,698,169.58	125,691.38	1,823,860.96
121	Hwy. No. 35-Tory Hill.....	67.3	374,179.77	132,342.88	506,522.65
122	Hwy. No. 2-Queen Elizabeth Way.....	3.7	49,684.32	29,149.58	78,833.90
124	Parry Sound-Sundridge.....	52.4	202,129.11	122,645.07	324,774.18
125	Hwy. No. 105-Red Lake Airport.....	7.2	9.76	23,272.18	23,281.94
127	Maynooth-Whitney.....	27.5	161,179.78	54,104.17	215,283.95
128	Kenora-Redditt.....	18.9	2,495.28	31,679.33	34,174.61
129	Thessalon-Chapleau.....	149.2	580,152.19	309,744.48	889,896.67
130	Hwy. No. 61-Port Arthur.....	20.3	128,777.75	56,160.12	184,937.87
132	Hwy. No. 41-Renfrew.....	19.5	217,317.68	34,601.11	251,918.79
133	Hwy. No. 28-Hwy. No. 7.....	5.4	19,061.40	14,190.33	33,251.73
135	Hwy. No. 2-Hwy. No. 401.....	3.8	201,191.38	6,840.93	208,032.31
400	Hwy. No. 401-Hwy. No. 11.....	53.2	2,894,059.95	464,699.05	3,358,759.00
401	Windsor-Tilbury; Hwy. No. 4- Eastwood; Hwy. 10-New- castle; Hwy. 30-Hwy. 2; Hwy. 38-Hwy. 2; Iroquois-Hwy. 2.....	213.8	24,721,259.32	1,293,463.23	26,014,722.55
402	Hwy. No. 7-Bluewater Bridge	3.8	46,986.11	5,274.50	52,260.61
451	Queen Elizabeth Way.....	97.3	9,453,269.70	890,680.47	10,343,950.17
Total Expenditures Allocated to King's Highways			\$119,564,517.96	\$25,311,307.96	\$144,875,825.92
Secondary Highways					
500	Bobcaygeon-Kinmount- Bancroft-Herman.....		659,097.16	207,866.95	866,964.11
501	Port Severn-Honey Harbour.....		9,558.37	29,969.81	39,528.18
502	Napanee-Marysville.....		16,692.69	27,113.48	43,806.17
503	Kirkfield-Sebright- Norland-Kinmount.....		97,282.13	152,372.43	249,654.56
504	Apsley-Chandos Lake Loop.....		Cr. 176.86	78,972.20	78,795.34
505	Uphill southerly-Hwy. No. 46		10,401.19	25,172.27	35,573.46
506	Peuna westerly-Hwy. No. 41		27,448.74	48,989.64	76,438.38
507	Rockcroft-Gooderham.....		26,848.18	54,559.60	81,407.78
508	Burnstown-Calabogie- Black Donald.....		1,311.35	44,688.40	45,999.75
509	Clarendon-Hwy. No. 7.....		73.19	13,831.90	13,905.09
510	Magnetewan-Hwy. No. 124.....			2,591.86	2,591.86

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
511	Calabogie-Brightside.....	.....	\$ 707.80	\$ 35,429.17	\$ 36,136.97
512	Eganville-Cormack.....	.....	17,164.02	17,764.24	34,928.26
513	Dacre-Hyndford.....	.....	.....	20,999.27	20,999.27
514	Hillside-Interlaken.....	.....	.....	29,964.50	29,964.50
515	Cobermere-Quadeville.....	.....	3,333.07	57,034.60	60,367.67
516	Windermere-Hwy. No. 11.....	.....	.....	21,430.64	21,430.64
517	Cobermere-New Carlow.....	.....	.....	21,833.38	21,833.38
518	Kearney-Parry Sound.....	.....	90,425.69	141,137.78	231,563.47
519	Hwy. No. 121-Haliburton- Red Stone Lake.....	.....	40,457.04	161,197.88	201,654.92
520	Burks Falls-Hwy. No. 124- Ardbeg.....	.....	4.50	104,568.16	104,572.66
521	Round Lake-Brudenell.....	.....	4,719.32	43,434.66	48,153.98
522	Trout Creek-Loring.....	.....	201,965.63	144,312.80	346,278.43
523	Hwy. No. 60-Trout Lake.....	.....	.....	29,594.95	29,594.95
524	Sec. Road 522-Sec. Road 534..	.....	.....	12,697.96	12,697.96
525	Gravenhurst-Muskoka Sanitarium Road.....	.....	.....	2,024.35	2,024.35
526	Hwy. No. 69-Britt.....	.....	.....	5,603.42	5,603.42
527	Huntsville-Baysville.....	.....	.....	21,462.83	21,462.83
528	Hwy. No. 64-Wolseley Bay.....	.....	.....	25,353.68	25,353.68
528A	Sec. Road No. 528-Pine Cove	.....	.....	10,092.66	10,092.66
529	Hwy. No. 69-Bayfield Wharf..	.....	.....	6,791.17	6,791.17
530	Carnovan-West Guilford.....	.....	1,078.62	41,972.15	43,050.77
531	Bonfield-Hwy. No. 17.....	.....	.....	3,119.00	3,119.00
532	Bracebridge-Hayes Corners.....	.....	246,899.25	102,764.39	349,663.64
533	Mattawa-Hwy. No. 62.....	.....	28,091.29	52,394.92	80,486.21
534	Powassan-Restoule.....	.....	22.61	61,083.16	61,105.77
535	Riviere Veuve-Noelville.....	.....	102,008.79	87,614.63	189,623.42
536	Hwy. No. 17-Creighton Mine	.....	55.82	7,638.81	7,694.63
537	Wanapitei-Hwy. No. 69.....	.....	6,158.59	37,010.89	43,169.48
538	Algoma By-pass.....	.....	.....	3,811.32	3,811.32
539	Warren-Field.....	.....	387.17	68,062.41	68,449.58
539A	Sec. Road 539-River Valley	.....	2,657.53	796.29	3,453.82
540	Little Current-Meldrum Bay..	.....	38,693.72	236,678.54	275,372.26
541	Hwy. No. 17-Falconbridge- Skead.....	.....	194,632.20	43,970.51	238,602.71
542	Tehkummah-Gore Bay.....	.....	14,839.45	158,930.28	173,769.73
543	Hwy. No. 69-Long Lake.....	.....	143,213.83	8,140.13	151,353.96
544	Sudbury-Levack-Geneva Lake	.....	569,580.39	158,484.46	728,064.85
545	Bailey's Corners-Milnet.....	.....	26,538.81	40,718.27	67,257.08
546	Iron Bridge-Mount Lake.....	.....	12,291.74	64,112.37	76,404.11
547	Sudbury-Frood.....	.....	1,592.00	1,731.35	3,323.35
548	St. Joseph's Island Road.....	.....	18,198.84	76,170.03	94,368.87
549	Hwy. No. 17-Lake Panache.....	.....	11,391.80	29,217.67	40,609.47
550	Sault Ste. Marie-Gros Cap.....	.....	7,055.11	14,831.88	21,886.99
551	West Bay-Providence Bay.....	.....	2,435.55	40,464.23	42,899.78
552	Hwy. No. 17-Goulais Bay.....	.....	.....	21,520.72	21,520.72
553	Massey-Sauble River Road.....	.....	21,946.80	56,601.56	78,548.36
554	Hwy. No. 129-Sec. Road No. 546.....	.....	.....	39,330.39	39,330.39
555	Blind River-Lake Duborne.....	.....	3,056.10	12,405.80	15,461.90
556	Island Lake-Wabos.....	.....	26,140.88	40,634.90	66,775.78
557	Blind River-Lake Matinenda..	.....	6,112.19	21,138.42	27,250.61
558	Haileybury-Montreal River....	.....	16,321.96	33,355.70	49,677.66
560	Englehart-Gogama.....	.....	59,306.15	232,599.04	291,905.19
561	Bruce Mines-Dunn Valley.....	.....	3,149.08	37,083.03	40,232.11
562	Hwy. No. 65-Thornloe.....	.....	8,915.98	21,440.80	30,356.78
563	Hwy. No. 17-Batchawana.....	.....	.....	12,940.75	12,940.75
564	Hwy. No. 112-Boston Creek....	.....	4,635.70	11,412.95	16,048.65
565	Sec. Road No. 550-Pointe aux Pins.....	.....	2,099.51	5,663.43	7,762.94
566	Matachewan-Ashley Mine.....	.....	2,260.21	31,949.47	34,209.68
567	Hwy. No. 11-Silver Centre.....	.....	.....	37,781.12	37,781.12
568	Hwy. No. 11-Kenogami.....	.....	.....	1,218.41	1,218.41

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
569	Hwy. No. 11, South of Englehart-Hwy. No. 11, North of Hanbury.....		\$	\$ 30,419.56	\$ 30,419.56
570	Hwy. No. 11-Sesekinika.....			3,821.65	3,821.65
571	Earlton-Sec. Road No. 562.....		3,636.80	9,592.39	13,229.19
572	Ramore-Haltyre Mine.....		13,512.69	12,361.61	25,874.30
573	Hwy. No. 11-Charlton.....		3,652.63	17,762.45	21,415.08
574	Cochrane-Norembega.....		15,817.27	54,135.35	69,952.62
575	Hwy. No. 101-Night Hawk Lake.....			2,897.37	2,897.37
576	Hwy. No. 101-Kamiskotia Lake Road.....			2,602.59	2,602.59
577	Shillington-Iroquois Falls.....		2,757.81	45,677.99	48,435.80
578	Iroquois Falls-Nellie Lake.....		6,852.12	16,875.65	23,727.77
579	Cochrane-Gardiner.....		16,847.03	19,177.89	36,024.92
580	Hwy. No. 11-Leitch.....		36,338.12	4,891.10	41,229.22
581	Hwy. No. 11-Remi Lake.....		5,129.26	1,445.23	6,574.49
582	Hurkett Cut-off.....		2,189.73	9,746.60	11,936.33
583	Mead-Lac Ste. Therese.....		53,796.07	85,066.68	138,862.75
584	Hardrock Mine-Nakina.....		60,551.65	36,443.21	96,994.86
585	Nipigon-Pine Portage.....		13,918.28	80,119.01	94,037.29
586	Shebandowan Lake-Hwy. No. 120.....		4,007.26	5,324.67	9,331.93
587	Hwy. No. 17-Silver Islet.....		7,262.09	42,020.89	49,282.98
588	Hwy. No. 17-Nolalu-Round Lake.....		46,571.47	79,348.28	125,919.75
589	Hwy. No. 17A-Kivikoski-Dog Lake.....		574.72	38,373.81	38,948.53
590	Nolalu-Hwy. No. 130.....		11,996.84	84,742.78	96,739.62
591	Sec. Road No. 589-Trout Lake.....		392.44	9,986.41	10,378.85
592	Fort Frances-Rainy Lake.....			5,257.80	5,257.80
593	Whitefish-Easterly.....		23,941.21	18,970.36	42,911.57
594	Eagle River-Dryden.....		2,867.18	31,562.23	34,429.41
595	Sec. Road No. 590-Sec. Road No. 597.....		10,895.48	77,825.23	88,720.71
596	Keewatin-Hwy. No. 17.....		50.11	30,355.62	30,405.73
597	Sec. Road No. 595-Sec. Road No. 608.....		236.90	10,204.79	10,441.69
598	Hwy. No. 128-Sec. Rd. No. 604.....			3,681.92	3,681.92
599	Savant Lake-Pickle Crow.....		2,689.97	157,595.70	160,285.67
600	Black Hawk-Sec. Road No. 623.....		202.86	67,417.46	67,620.32
601	Dryden-Rice Lake Loop.....		11,026.62	23,178.34	34,204.96
602	Fort Frances-Emo.....		24,023.22	56,255.88	80,279.10
603	Borups Corners-Dymont.....			4,770.02	4,770.02
604	Kenora-Silver Lake.....		2,462.99	19,491.52	21,954.51
605	Hwy. No. 17-Eton-Rugby.....		8,877.17	17,409.37	26,286.54
606	Hwy. No. 17-Markstay.....		102,401.68	1,647.52	104,049.20
607	French River-Hwy. No. 64.....		15.97	23,570.85	23,586.82
607A	Hwy. No. 69-Sec. Rd. No. 607.....			1,181.08	1,181.08
608	Moose Hill-Sec. Rd. No. 595.....		1,068.36	18,003.23	19,071.59
609	Hwy. No. 105-Clay Lake.....			10,756.28	10,756.28
610	Barber's Bay-Hwy. No. 101.....			30,388.86	30,388.86
611	Crozier Road-North and South.....			16,812.99	16,812.99
613	Big Fork-Lake Despair.....		7,806.37	55,713.48	63,519.85
614	Hwy. No. 17-Manitouwadge.....		195,127.03	55,305.00	250,432.03
615	Black Hawk-Burditt Lake.....		14,322.84	36,651.91	50,974.75
616	Hwy. No. 101-Groundhog River.....		20,582.48	44,077.44	64,659.92
617	Stratton-North Branch.....			32,173.51	32,173.51
618	Red Lake-Madsen.....			15,234.40	15,234.40
619	Pinewood-Sec. Road No. 621.....			40,326.12	40,326.12
620	Hwy. No. 62-Glen Alda.....		85,458.87	32,904.20	118,363.07
621	Sleeman-Morson.....		73,016.72	71,137.36	144,154.08
622	Atikokan-Caland Ore Mine.....		54,294.02	16,534.10	70,828.12
623	Rainy River-Harris Hill.....			24,864.21	24,864.21
624	Foleyet-Sec. Road No. 616.....		446.71	13,218.80	13,665.51

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
625	Hwy. No. 11-Caramat.....		\$ 5,974.61	\$ 16,209.01	\$ 22,183.62
627	Hwy. No. 17-Heron Bay.....		84,221.06	7,234.71	91,455.77
631	Hwy. No. 11-Hornepayne.....		6,166.70	30,822.06	36,988.76
Total Expenditures Allocated to Secondary Highways.....			\$3,833,062.29	\$5,367,227.35	\$9,200,289.64
	Ferries.....		\$ 29,804.32	\$ 235,607.45	\$ 265,411.77
	Freeman-Wolfe Island.....		382,687.36		382,687.36
	Queensway, Toronto.....		120,892.81		120,892.81
	Bloor Street, Toronto.....		900,982.53		900,982.53
	Yonge Street, Toronto.....		12,870.20		12,870.20
	Dundas Street, Toronto.....		7,237.86		7,237.86
	Lakeshore Expressway, Toronto.....		498,997.05		498,997.05
	Ottawa Queensway.....		1,268,330.15		1,268,330.15
	Eglinton Avenue, Toronto.....		700.00		700.00
	Timmins Airport Road.....		63,241.85	13,609.70	76,851.55
	North Bay Airport Road.....			9,788.01	9,788.01
	Pelee Island.....		101,677.00	4,579.64	106,256.64
	Bicroft Mine Road.....		2,396.78		2,396.78
	Pembroke-Allumette Island.....		9,124.89		9,124.89
	Heron Bay Access Road.....		1,225.00		1,225.00
	Burwash-Killarney.....		128,061.22		128,061.22
	Hill Island.....			3,395.89	3,395.89
	Geraldton Cut-off.....		37,136.57	3,559.87	40,696.44
	Kashabowie Road.....		420.00		420.00
	Miscellaneous Surveys.....		226,719.05		226,719.05
	Sidewalks.....		26,745.17		26,745.17
	Connecting Links.....		688,528.36	287,148.41	975,676.77
	Unincorporated Township Roads.....		357,921.11	729,504.66	1,087,425.77
	Development Roads.....		6,750,354.20	176,793.82	6,927,148.02
Highway Totals			\$135,013,633.73	\$32,142,522.76	\$167,156,156.49
Sundry Unallocated District Office Administrative, Engineering Building, Inventory Charges, etc.			2,253,627.65	5,126,907.00	7,380,534.65
Total Expenditure.....			\$137,267,261.38	\$37,269,429.76	\$174,536,691.14

APPENDIX No. 3

SCHEDULE OF CONTROLLED-ACCESS HIGHWAYS

April 1, 1958 to March 31, 1959

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
2	Windsor to Quebec Boundary.....	126/58	.....
	Montreal Road-Lancaster Twp.....		8.44
7	Langstaffe Diversion.....	260/58	.....
	Markham Twp.....		1.15
	Peterborough By-pass.....	230/58	.....
	North Monaghan Twp.....		3.94
	Otonabee Twp.....		2.68
8	Rockton By-pass.....	216/58	.....
	Beverly Twp.....		1.17
	Sheffield By-pass.....	216/58	.....
	Beverly Twp.....		1.23
	Orangeville Diversion.....	3/59	.....
9	Caledon and Mono Twps.....		0.62
10	Caledon Twp.....		0.47
	Town of Orangeville.....		0.22
11	Cobalt-Haileybury-New Liskeard Diversion.....	263/58	.....
	Coleman Twp.....		4.71
	Bucke Twp.....		6.37
	Dymond Twp. and Town of New Liskeard.....		3.76
	Powassan to North Bay.....	183/58	.....
	South Himsworth Twp.....		3.30
	North Himsworth Twp.....		4.87
	West Ferris Twp.....		1.31
12	Coldwater By-pass.....	3/59	.....
	Medonte Twp.....		1.36
14	Mountain View By-pass.....	35/59	.....
	Ameliasburgh Twp.....		0.93
	Rossmore By-pass.....	35/59	.....
	Ameliasburgh Twp.....		3.23
15	Carleton Place By-pass.....	172/58	.....
	Ramsay Twp.....		0.18
	Beckwith Twp.....		2.12
	Innisville Diversion.....	236/58	.....
	Edwardsburgh Twp.....		1.30
17TC	Montreal River Crossing.....	290/58	.....
	Township 29, Range 15.....		0.39
	Nipigon By-pass.....	36/59	.....
	Nipigon Twp.....		2.35
	Papineau Twp. Diversion.....	171/58	3.13
	Rosspoint By-pass.....	36/59	.....
	Township 86.....		1.18
25	Trafalgar Twp. Diversion.....	98/58	1.21
	Springville Diversion.....	142/58	.....
28 & 7A	N. Monaghan and Cavan Twps. — P-2954-21.....		2.88
133 T.C.	N. Monaghan and Cavan Twps. — P-3329-1.....		1.23
27	Brown's Line.....	230/58	.....
	Vaughan Twp.....		1.98
48	Dixons Hill By-pass.....	216/58	.....
	Markham Twp.....		1.05
58	The West Side Road — Welland County.....	264/58	.....
	Crowland Twp.....		1.56
	Humberstone Twp.....		4.39
60	Barry's Bay Diversion.....	142/58	.....
	Sherwood Twp.....		2.24
61	Pardee Twp. Diversion.....	215/58	1.69
69 T.C.	Nobel to Britt.....	290/58	.....
	Carling Twp.....		7.00
	Shawanaga Twp.....		7.37

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
	Harrison Twp.		9.54
	Wallbridge Twp.		9.23
	Henvey Twp.		0.82
101	Whitney Twp. Diversion	171/58	0.92
103	Waubausene to MacTier —		
	Gibson Twp.	217/58	9.90
	Freeman Twp.		4.74
	Tay Twp.	290/58	4.67
	Baxter Twp.		0.74
109	Bicroft Mine Road	173/58	
	Faraday Twp. — P-3262-2		2.04
	Cardiff Twp. — P-3341-3		1.65
	Cardiff Twp. — P-3341-8		0.21
111	Dyno Mine Road	286/58	
	Cardiff Twp.		3.23
400	Crown Hill to Coldwater	112/58	
	Vespra Twp.		7.90
	Flos Twp.		2.17
	Medonte Twp.		11.77
541	Bailey's Corners Diversion	122/58	
	Garson Twp.		0.65
	Garson Twp. Diversion	171/58	1.06
Q.E.W.	Louth and Grantham Twps.	261/58	6.10
	Stamford Twp.		7.22
	Willoughby Twp.		6.79
	Bertie Twp.		6.29
Queens- way (17)	Ottawa Queensway —		
	City of Ottawa	188/58	1.38
	City of Ottawa	233/58	8.64
17 T.C.	Ottawa By-pass	158/58	
	Montreal Rd. — Gloucester Twp.		
	Blair Road — Gloucester Twp.		
27	Brown's Line	216/58	
	Dixon Road — Etobicoke Twp.		
	Toronto By-pass*	141/58	
	Burnhamthorpe Road		
	Dundas St. (Hwy. 5)		
	Richview Road		
	Queen Elizabeth Way		
115	Newcastle to Peterborough	211/58	
	Highway 2 — Clarke Twp.		
400	Crown Hill to Coldwater	112/58	
	Highway 93 — Floss Twp.		
	Highway 93 — Medonte Twp.		
	Toronto to Barrie	213/58	
	Finch Ave. West — North York Twp.		
401	Toronto By-pass*	141/58	
	Avenue Road		
	Bathurst Street		
	Bayview Avenue		
	Dixon Road		
	Dufferin Street		
	Highway 400		
	Islington Avenue		
	Jane Street		
	Keele Street		
	Kennedy Road		
	Leslie Street		
	Little's Road		
	Markham Road		
	Victoria Park Avenue		
	Warden Avenue		
	Weston Road		
	Woodbine Avenue		
	Yonge Street		

* Consolidated Regulations 1950 Number 134, Item 6d.

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
401	Windsor to Quebec Boundary.....	126/58	.....
	Highway 3.....	.....	.....
	County Road 7 — Essex.....	.....	.....
	County Road 8 — Essex.....	.....	.....
	County Road 11 — Essex.....	.....	.....
	County Road 10 — Kent.....	.....	.....
	County Road 15 — Kent.....	.....	.....
	Highway 21.....	.....	.....
	Furnival Road.....	.....	.....
	Graham Road.....	.....	.....
	County Road 5 — Elgin.....	.....	.....
	Dutton Road.....	.....	.....
	County Road 14 — Elgin.....	.....	.....
	County Road 19 — Elgin.....	.....	.....
	Townline Interchange — Southwold and Delaware Twps.....	.....	.....
	Highway 4.....	.....	.....
	Wellington Road.....	.....	.....
	County Road 37 — Middlesex.....	.....	.....
	Highway 74.....	.....	.....
	County Road 32 — Middlesex.....	.....	.....
	Highway 73.....	.....	.....
	Putnam Road.....	.....	.....
	Sweaburg Road.....	.....	.....
	Highway 59.....	.....	.....
	County Road 14 — Oxford.....	.....	.....
	Highway 2 — Eastwood.....	.....	.....
	County Road 6 — Waterloo.....	.....	.....
	Highway 24.....	.....	.....
	Pine Bush Road.....	.....	.....
	County Road 50 — Wellington.....	.....	.....
	Highway 6.....	.....	.....
	Nelson Street.....	.....	.....
	Highway 25.....	.....	.....
	Seventh Line — Trafalgar Twp.....	.....	.....
	Dixie Road.....	.....	.....
	Highway 2 — Hope Twp.....	.....	.....
	Highway 28.....	.....	.....
	Burnham Road.....	.....	.....
	Centreton Road.....	.....	.....
	Castleton Road.....	.....	.....
	County Road 5A — Hastings.....	.....	.....
	Highway 14.....	.....	.....
	Townline Interchange — Richmond and Tyendinaga Twps.....	.....	.....
	Highway 41.....	.....	.....
	County Road 4 — Lennox and Addington.....	.....	.....
	Sydenham Road.....	.....	.....
	Division Street.....	.....	.....
	Montreal Street.....	.....	.....
	Joyceville Road.....	.....	.....
	Highway 32.....	.....	.....
	Highway 2 — Elizabethtown Twp.....	.....	.....
	Maitland Road.....	.....	.....
	Kemptville Road.....	.....	.....
	County Road 1 — Dundas.....	.....	.....
	Highway 31.....	.....	.....
	County Road 12 — Stormont.....	.....	.....
	Townline Interchange — Cornwall and Charlottenburgh Twps.....	.....	.....
	Nine Mile Road.....	.....	.....
	Renforth Drive.....	214/58	.....
	Highway 33.....	.....	.....
	North Augusta Road.....	.....	.....
	Highbury Ave. — Westminster Twp.....	262/58	.....
	Fourth Line West — Toronto Twp.....	.....	.....
	Highway 10.....	.....	.....
	Highway 30.....	.....	.....

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
	Highway 34.....		
	Highway 2 — Lancaster Twp.....		
South Orillia	South Orillia By-pass.....	212/58	
	Orillia Twp. (S. Div.) Intersection of Orillia By-pass and South Orillia By-pass.....		
Q.E.W.	Burlington Interchange† — Town of Burlington.....	235/58	
	Dixie Road — Toronto Twp.....	2/59	
	Lake Street — Grantham Twp.....	261/58	
	Ontario Street — Grantham Twp.....		
	Old Beach Road — City of Hamilton.....	157/58	
TOTAL MILEAGE AS OF MARCH 31, 1959.....			1204.68
TOTAL MILEAGE DESIGNATED DURING FISCAL YEAR ENDING MARCH 31, 1959.....			186.85

† Consolidated Regulations 1950, Number 134, Item C.

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND REDESIGNATIONS OF SECTIONS OF KING'S HIGHWAY AND SECONDARY ROAD SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1959

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	Hwy. No.	MILES
Algoma.....	P-3368.....	Ste. Mary's.....	April 17/58	17	0.830
	P-2415-12.....	Thompson.....	April 17/58	17	5.150
	P-2104-22.....	Plummer (Additional).....	April 17/58	17	8.900
	P-2252-7.....	Vankoughnet.....	April 24/58	17	5.340
	P-3376.....	Fenwick.....	May 8/58	17	4.240
	P-2424-16.....	Tarentorus.....	May 8/58	17	6.130
	P-2438-11.....	Awerees.....	May 8/58	17	2.380
	P-3380.....	Havilland and Tupper.....	May 15/58	17	9.550
	P-2189-1.....	Rankin Location Indian Res. 15-D.....	May 15/58	17	1.155
	P-2275-14.....	Tilley.....	May 29/58	17	7.050
	P-2133-22.....	Garden River, Indian Res. 14.....	June 12/58	17	9.170
	P-2375-7.....	Fisher.....	July 24/58	17	6.420
	P-2553-42.....	Thessalon.....	Sept. 4/58	17	10.440
	P-2831-6.....	29, Range 15.....	Sept. 4/58	17	0.190
	P-3449.....	Arnott.....	Nov. 6/58	631	9.600
	P-2573-2.....	Wicksteed.....	Nov. 6/58	631	7.200
	P-3451.....	Frost.....	Nov. 6/58	631	5.770
	P-3448.....	Elgie.....	Nov. 6/58	631	9.800
	P-3450.....	McEwing.....	Nov. 6/58	631	6.150
	P-3383.....	29, Range 14.....	Nov. 20/58	17	7.780
	P-2341-19.....	Ryan.....	Dec. 4/58	17	11.160
	P-2254-14.....	Day.....	Mar. 20/58	17	3.520
	P-2188-10.....	MacDonald.....	Mar. 20/58	17	3.750
	P-2505-3.....	Bright.....	Mar. 27/58	17	0.470
	P-2133-21.....	Serpent River Indian Res.....	Mar. 27/58	17	2.190
	P-2220-16.....	Johnson.....	Mar. 27/58	17	7.490
	P-2376-3.....	Herrick.....	Mar. 27/58	17	2.530
Bruce.....	P-2248-28.....	Saugeen.....	Nov. 6/58	21	15.640
Carleton.....	P-3395.....	Mountjoy.....	May 1/58	629	4.250
	P-3396.....	Jessop.....	May 1/58	629	2.250
Cochrane.....	P-2653-3.....	Clavet.....	Aug. 21/58	11	16.280
	P-3358-4.....	Marriott.....	May 15/58	101	3.970
	P-3358-3.....	Marriott.....	May 22/58	101	0.750
	P-2751-2.....	Kohler.....	Sept. 25/58	11	9.160
	P-2639-6.....	Hanlan.....	Oct. 2/58	11	4.180

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
	P-2643-4	McMillan	Oct. 23/58	11	9.280
	P-2644-2	McCoig	Oct. 23/58	11	9.100
	P-2638-6	Way	Nov. 6/58	11	5.200
	P-3452	McMillan	Nov. 6/58	631	3.900
	P-2592-7	Stoddart	Nov. 20/58	11	9.000
	P-3459	Studholme	Nov. 20/58	11	9.620
Durham	P-2390-20	Clarke	April 17/58	35	0.640
	P-2740-40	Manvers	July 17/58	35	13.100
Essex	P-1898-8	Tilbury N.	Mar. 20/58	2	7.890
Frontenac	P-1966-16	Hinchinbrooke	Oct. 2/58	38	15.000
Grey	P-1962-19	Proton, Artemesia and Melancthon	Mar. 20/58	10	3.940
	P-1869-27	Egremont & Normanby	Mar. 27/58	6	12.150
Haldimand	P-2748-25	Seneca	July 17/58	54	8.280
	P-1692-13	Canborough	Aug. 21/58	3	8.014
	P-1919-8	Rainham	Sept. 4/58	3	0.510
	P-1818-11	Walpole	Oct. 2/58	3	9.000
	P-1928-20	Cayuga N.	Oct. 2/58	3	12.940
	P-1700-18	Moulton	Jan. 29/59	3	7.100
Haliburton	P-3344-4	Monmouth	June 26/58	109	2.415
	P-3366-5	Cardiff	July 17/58	111	3.260
	P-3341-17	Cardiff	Sept. 25/58	109	7.800
Halton	P-1699-27	Flamborough E. and W.	May 8/58	6	11.350
Kenora	P-3493-1	Wainwright	Mar. 5/59	119	0.570
Lennox	P-3173-59	Ernestown	Jan. 15/59	401	Interchange
Lincoln	P-3382	Niagara	May 15/58	8-A	2.720
	P-3381	Niagara	May 15/58	8	2.950
Nipissing	P-3421	French	Oct. 2/58	533	0.370
	P-2494-20	Commanda	April 24/58	17	6.600
	P-2259-9	Nipissing Indian Res. 10	May 8/58	17	1.080
	P-2732-2	Lyell	June 26/58	60	1.460
	P-2625-3	Dickens	June 26/58	60	4.830
	P-2169-16	Murchison	July 17/58	60	7.000
	P-3419	Jocko (Unsubdivided)	Oct. 2/58	533	1.000
	P-3422	Antoine	Oct. 2/58	533	5.250
	P-3420	Butler	Oct. 2/58	533	7.500
Northumberland	P-1995-7	Brighton	April 17/58	2	5.450
	P-1512-8	Haldimand	June 19/58	2	9.099
	P-1784-23	Brighton and Percy	June 26/58	30	13.420
Ontario	P-1849-10	Pickering and Markham	July 17/58	7	9.900
	P-1893-22	Mara	Sept. 11/58	12	13.772
	P-2918-3	Mara	Sept. 25/58	69	7.300
	P-2798-4	Thorah and Brock	Sept. 17/58	48	4.600
	P-2657-19	Rama	Oct. 23/58	69	7.940
	P-1605-12	Thorah and Brock	Nov. 6/58	12	5.150
Oxford	P-3278-1	Norwich S.	Nov. 20/58	3	0.130
Peel	P-1899-16	Chinguacousy	April 24/58	7	5.240
	P-1899-17	Chinguacousy	May 8/58	7	4.480
	P-1857-157	Toronto	June 19/58	Q.E.W.	0.260
	P-1801-115	Toronto	July 17/58	5	9.340
	P-1659-40	Toronto	Jan. 29/59	10	0.250
Prince Edward	P-1508-23	Ameliasburgh	Jan. 8/59	14	3.220
Rainy River	P-3076-21	Unsurveyed Terr.	April 17/58	120	1.120
Renfrew	P-2155-10	Jones	July 17/58	60	5.580
	P-2655-22	Wilberforce	Sept. 4/58	60	6.280

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Simcoe	P-2969-10	Gwillimbury W.	July 17/58	88	5.220
	P-1856-28	Orillia S.	Aug. 27/58	11	0.900
	P-2145-5	Gwillimbury W.	Mar. 20/58	11	3.670
	P-1608-18	Flos	Mar. 27/58	27	6.920
Sudbury	P-2531-9	Salter	April 17/58	17	6.070
	P-3222-4	Foleyet	June 12/58	624	2.270
	P-3391	Keith	June 12/58	624	0.940
	P-3386	Muskego	June 12/58	624	8.750
	P-2276-20	Hagar	Mar. 27/58	17	8.060
Temiskaming	P-2555-12	Bucke	Aug. 27/59	11	6.370
Thunder Bay	P-3370	Unsurveyed Terr.	April 17/58	625	18.000
	P-3373	Kilkenny	May 1/58	11	8.867
	P-2275	Ledger	May 1/58	11	6.920
	P-2544-83	Unsurveyed Terr.	May 8/58	11	8.000
	P-3378	Nipigon	May 8/58	11	1.080
	P-3374	Kitto	May 8/58	11	2.670
	P-3379	Legault	May 8/58	11	6.170
	P-2544-84	Unsurveyed Terr.	May 8/58	11	5.170
	P-3034-1	McComber	May 8/58	11	6.410
	P-3030-1	Vincent	May 29/58	11	0.650
	P-2544-85	Unsurveyed Terr.	June 12/58	11	14.200
	P-3040-2	Walters	June 12/58	11	5.500
	P-3393	Abrey	July 17/58	11	0.960
	P-3308-3	Pic	July 17/58	627	3.800
	P-3308-4	Pic	July 30/58	627	1.200
	P-2637-10	Ashmore	July 30/58	11	6.300
	P-3407	Colter	Aug. 21/58	11	6.360
	P-2629-3	Croll	Sept. 4/58	11	7.120
	P-3033-9	Summers	Sept. 4/58	11	6.240
	P-3412	Lindsley	Sept. 25/58	11	6.630
	P-2517-8	Leduc	Sept. 17/58	11	6.960
	P-2642-2	Oakes	Sept. 25/58	11	5.760
	P-2631-7	Errington	Oct. 2/58	11	6.300
	P-2544-87	Unsurveyed Terr.	Oct. 2/58	11	9.760
	P-3427	Nakina	Oct. 16/58	584	3.000
	P-3425	McQuesten	Oct. 16/58	584	6.000
	P-3426	Errington and Ashmore	Oct. 16/58	584	2.250
	P-3430	Fulford	Oct. 16/58	584	2.500
	P-3428	Exton	Oct. 16/58	584	7.000
	P-3429	Unsurveyed Terr.	Oct. 16/58	584	19.000
	P-2611-5	Gill	Oct. 16/58	11	9.192
	P-2544-88	Unsurveyed Terr.	Oct. 23/58	11	10.200
	P-2544-90	Unsurveyed Terr.	Oct. 23/58	11	9.380
	P-2544-89	Unsurveyed Terr.	Oct. 23/58	11	9.600
	P-2544-86	Unsurveyed Terr.	Jan. 29/59	11	10.360
	P-3028-1	Gibbard	Feb. 5/59	17 T.C.	1.580
	P-3031-2	Inwood	Feb. 5/59	17 T.C.	1.170
	P-3501	Trevartha	Feb. 5/59	17 T.C.	6.200
	P-2875-4	Robson	Feb. 12/59	17 T.C.	5.340
	P-3032-2	Savanne	Feb. 12/59	17 T.C.	6.180
	P-3500	Pyramid	Feb. 12/59	17 T.C.	4.200
	P-3196-1	Michener	Feb. 12/59	17 T.C.	3.000
	P-3197-3	Golding	Feb. 12/59	17 T.C.	3.930
	P-3268-8	Unsurveyed Terr.	April 17/58	614	1.730
	P-3268-9	Unsurveyed Terr.	April 17/58	614	4.160
	P-3268-10	Unsurveyed Terr.	April 17/58	614	4.730
	P-3268-11	Unsurveyed Terr.	April 17/58	614	2.500
	P-3268-12	Unsurveyed Terr.	April 17/58	614	6.829
	P-3268-13	Unsurveyed Terr.	April 17/58	614	5.370
	P-3268-14	Unsurveyed Terr.	April 17/58	614	2.700
Waterloo	P-2437-21	Woolwich	Jan. 13/59	86	2.100
Welland	P-2086-6	Humberstone	July 17/58	58	4.400
	P-2085-4	Crowland	July 30/58	58	1.560
	P-1442-5	Crowland	Dec. 18/58	3A	1.600
Wellington	P-1868-35	Maryborough and Peel			
		Arthur-Minto	Mar. 20/58	9	11.420
York	P-1698-81	Markham-Vaughan	Aug. 21/58	11	2.940
TOTAL PLANS		155	TOTAL MILEAGE		904.503

APPENDIX No. 3B

**SCHEDULE OF REVERSIONS OF SECTIONS OF THE
KING'S HIGHWAY AND SECONDARY ROAD SYSTEMS FOR THE
FISCAL YEAR ENDING MARCH 31, 1959**

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Brant.....	P-1997-51.....	Brantford.....	July 30/58	2	0.110
	P-1433-4.....	Dumfries S.....	Feb. 19/59	24A	1.080
Bruce.....	P-2277-30.....	Amabel.....	Nov. 6/58	6	0.410
	P-2248-26.....	Saugeen.....	June 5/58	21	3.680
	P-2100-8.....	Amabel.....	June 5/58	21	0.760
Carleton.....	P-1591-43.....	Nepean.....	Aug. 27/58	16	0.076
Cochrane.....	P-2322-29.....	Calvert.....	Jan. 13/59	11, 67	0.400
	P-2336-3.....	Tisdale.....	Feb. 12/59	101	0.820
	P-3331-4.....	Way and Kendall.....	Dec. 4/58	583	0.490
Dufferin.....	P-1785-24.....	Garafraxa E.....	Oct. 2/58	9	0.540
Essex.....	P-3355.....	Essex (Town).....	Feb. 27/58	3	1.130
	P-3367-2.....	Sandwich S. and W.....	Dec. 11/58	3B	0.310
	P-1913-19.....	Malden.....	July 25/58	18	0.600
Grey.....	P-1842-33.....	Bentinck and Glenelg.....	Sept. 25/58	6	0.250
	P-1842-34.....	Bentinck and Glenelg.....	Sept. 11/58	6	0.390
	P-1869-32.....	Egremont & Normanby.....	Dec. 4/58	6	0.810
Halton.....	P-1939-111.....	Trafalgar.....	July 17/58	Q.E.W.	0.150
	P-1939-118.....	Trafalgar.....	Feb. 12/59	Q.E.W.	3.600
Hastings.....	P-1561-23.....	Sidney.....	Jan. 15/59	2	0.910
	P-1487-24.....	Thurlow.....	Jan. 15/59	2	1.060
	P-1926-15.....	ThurLOW.....	Jan. 15/59	37	1.000
	P-2563-10.....	ThurLOW.....	Jan. 15/59	14	0.980
	P-3463-1.....	Mayo.....	Dec. 22/58	500	3.750
Huron.....	P-2543-28.....	Goderich.....	July 17/58	21	0.250
	P-2766-32.....	Turnberry.....	July 17/58	86	0.220
	P-1848-26.....	Wawanosh E.....	June 12/58	4	0.170
Kent.....	P-1975-40.....	Gore of Chatham.....	July 17/58	40	0.380
	P-1975-42.....	Gore of Chatham.....	Feb. 26/59	40	0.570
Lanark.....	P-2239-7.....	Beckwith.....	Oct. 23/58	29	0.410
Leeds.....	P-1987-49.....	Elizabethtown.....	Dec. 18/58	29	0.130
	P-2013-35.....	Elizabethtown.....	Sept. 25/58	2	0.250
	P-2013-37.....	Elizabethtown.....	Oct. 23/58	2	0.330
Middlesex.....	P-2933-17.....	Adelaide and Williams E. and W.....	Jan. 29/59	81	0.450
Nipissing.....	P-2465-7.....	Sturgeon Falls (Town).....	July 30/58	17	0.750
Peel.....	P-1857-164.....	Toronto.....	Nov. 20/58	Q.E.W.	0.760
	P-1857-165.....	Toronto.....	Nov. 27/58	Q.E.W.	2.500
	P-1857-167.....	Toronto.....	Dec. 22/58	Q.E.W.	0.840
	P-1857-168.....	Toronto.....	Jan. 8/59	Q.E.W.	3.300
Peterborough.....	P-2526-5.....	Asphodel.....	Aug. 21/58	45	0.170
Prescott.....	P-1993-8.....	Alfred.....	June 27/58	17	0.470
	P-1768-23.....	Longueuil.....	Nov. 6/58	17	0.970
	P-1768-25.....	Longueuil.....	Nov. 6/58	17	0.610
Simcoe.....	P-2145-6.....	Gwillimbury W.....	July 24/58	11	0.220
	P-2969-11.....	Gwillimbury W.....	July 28/58	88	0.019
	P-2749-20.....	Tay.....	Jan. 29/59	103	0.800
	P-2749-21.....	Tay.....	Jan. 29/59	103	2.390

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Thunder Bay.....	P-3252-13.....	Harwich.....	Nov. 6/58	98	0.340
Waterloo.....	P-1417-40.....	Waterloo.....	June 5/58	8	1.920
	P-1417-41.....	Waterloo.....	July 30/58	8	0.380
	P-1791-68.....	Waterloo.....	June 5/58	7	0.400
	P-1791-69.....	Waterloo.....	June 5/58	7	0.900
Welland.....	P-2085-3.....	Crowland.....	June 26/58	58	1.200
	P-2086-5.....	Humberstone.....	Sept. 4/58	58	2.620
York.....	P-2850-17.....	Etobicoke.....	Dec. 4/58	Queensway	3.810
	P-1676-49.....	York N.....	June 30/58	11	0.110
	P-2770-361.....	York N.....	July 30/58	401	0.028
TOTAL PLANS.....		56	TOTAL MILEAGE...		51.973

APPENDIX No. 4 BRIDGES COMPLETED DURING 1958

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Algoma Central and Hudson Bay Rlwy. Overhead	Concrete slab (pre-cast)	39'-0"	Hwy. 17 (T.C.H.) White River-Wawa	No. 30	....	Range 23	Algoma	15
Anne St. Underpass at Barrie	Concrete rigid frame	2 @ 57'-3 3/4"	Hwy. 400 Barrie By-pass	Vespra	23	V-VI	Simcoe	6
Aux Sables River Bridge at Massey	Continuous concrete "T" Beam	1 @ 70'-0" 1 @ 95'-0"	Hwy. 17 (T.C.H.) at village of Massey	Salter	25	....	Sudbury	18
Beach Rd. Underpass	Concrete box girder (pre-stressed post tension)	101'-0"	Hwy. 55 Hamilton to Q.E.W.	Saltfleet	30	I	Wentworth	4
Bell's Creek and C.P.R. Overhead	Concrete rigid frame	2 @ 82'-6"	Hwy. 6 Arthur-Mt. Forest	Arthur	12	E. and W. of Owen Sound Road B.F.	Wellington	5
Blessington Creek Bridge	Concrete rigid frame	1 @ 60'	Hwy. 2 Belleville-Shannonville	Thurlow	19	Hastings	Hastings	8
Baysville Bridge over the Muskoka River	Continuous steel beam	57'-9 1/2' / 84'-0' / 57'-9"	Hwy. 118 Hwy. 11-Hwy. 35	McLean	16	VII-VIII	Muskoka	11
Big East River Bridge	Steel girder	1 @ 120'	Hwy. 11 Huntsville By-pass	Chaffey	18	VII	Muskoka	11
Black River Bridge	Steel plate girder	2 @ 67'-1" 1 @ 92'-0"	Hwy. 17 (T.C.H.) Marathon-White River	Pic	6	VII	Thunder Bay	19
Black Sturgeon River Bridge	Continuous steel plate girder	100'-0" / 150'-0" / 100'-0"	Hwy. 17 Nipigon-Port Arthur	Lyons	3	VIII	Thunder Bay	19
Blind River Bridge	Steel plate girder	1 @ 97'-0"	Hwy. 17 (T.C.H.) in Blind River	Cobden	....	....	Algoma	18
Bug River Bridge	Timber trestle (composite timber & concrete deck)	6 @ 20'-0"	Hwy. 105 Hwy. 17-Red Lake	Unsurveyed	....	....	Kenora	20
Burlington Skyway over the Burlington Canal	Steel through arched truss with cantilevered side spans	275'-0" 495'-0" 275'-0"	Q.E.W. City of Hamilton	.....	....	....	Wentworth	4
Caledon Twp. C.P.R. Overhead	Steel deck truss	4 @ 250'-0" 6 @ 200'-0" 12 @ 160'-0"						
	Steel plate girder Steel beam	18 @ 85'-0" 32 @ 48'-0"						
	Cantilever concrete slab	3 @ 47'-0"	Hwy. 51 Coulterville-Caledon	Caledon	16	III	Peel	3

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
C.P.R. Overhead Hawk Junction to White River	Steel beam	3 @ 58'-3"	Hwy. 17 (T.C.H.) White River-Wawa	Thessalon			Algoma	15
Cedar Creek Bridge	Concrete rigid frame	49'-8"	Hwy. 17 (T.C.H.) Marathon-White River	No. 73			Thunder Bay	15
Chukuni River Bridge	Timber trestle (steel beam-main span)	14 @ 20'-0" 1 @ 38'-6"	Hwy. 105 Hwy. 17-Red Lake	Unsurveyed			Kenora	20
Clarke Twp. Bridge 4 over Wilnot Creek	Concrete rigid frame	1 @ 50'-0"	Hwy. 401 Bowmanville-Port Hope	Clarke	32	I	Durham	7
Clarke Twp. Bridge 10 over Graham Creek	Concrete barrel arch	1 @ 40'-0"	Hwy. 401 Bowmanville-Port Hope	Clarke	27	I	Durham	7
Clarke Twp. Bridge 12 over the C.P.R.	Concrete rigid frame	1 @ 51'-3"	Hwy. 401 Bowmanville-Port Hope	Clarke	24	I	Durham	7
Clarke Twp. Bridge 20	Concrete rigid frame	1 @ 60'-0"	Hwy. 401 Bowmanville-Port Hope	Clarke	8 9	I	Durham	7
Credit River Bridge	Concrete rigid frame	1 @ 60'-0"	Hwy. 51 Coulterville-Caledon	Caledon	16	III	Peel	3
Credit (West) River Bridge at Erin	Concrete rigid frame	1 @ 35'-0"	Hwy. 24 Galt-Orangeville	Erin	17-18	XI	Wellington	3
Credit River (South Branch) Bridge	Concrete rigid frame	1 @ 40'-0"	Hwy. 10 Caledon-Orangeville	Caledon	26	IE-IV	Peel	6
Credit River Bridge at Orangeville	Concrete rigid frame (double barrel culvert)	2 @ 12'-0"	Hwy. 10 at Orangeville	Caledon			Peel	6
Cyrville Road Underpass Ottawa Queensway	Concrete "T" beam	2 @ 110'-0"	Hwy. 17A (T.C.H.) Ottawa Queensway	Gloucester	25 26	II	Carleton	9
Darlington Twp. Bridge 23	Concrete beam (prestressed)	1 @ 60'-0"	Hwy. 401 Windsor Brockville	Darlington	1	B.F.	Durham	7
Dewar River Bridge	Continuous steel beam	36' 0"/54'-0"/36' 0"	Hwy. 17 (T.C.H.) White River-Wawa	No. 64			Algoma	15
Dorset Bridge over the Lake of Bays	Continuous steel beam	60'/84'/84'/60'	Hwy. 35 Dorset By-pass	Sherborne	30	A	Haliburton	11
Driftwood River	Bailey main span, timber trestle approaches	6 @ 16' 2 @ 13'-3" 2 @ 11'-0" 1 @ 130' 0"	Hwy. 11 Matheson-Porquiss Junction	Walker	5 1/2 12	II	Cochrane	14
Engle River Bridge	Continuous steel girder (prestressed slab)	2 @ 86'-0"/1 @ 112'-0"	Hwy. 17 (T.C.H.) Dryden-Kenora	Mutrie	2	I	Kenora	20

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Eels Creek Bridge at Apsley	Steel beam	1 @ 75'	Sec. Road 504 Apsley By-pass	Anstruther	34	II	Peterboro	10
Elizabethtown Twp. Bridge 7	Concrete rigid frame	1 @ 43'-10 1/2"	Hwy. 401 Kingston-Brockville	Elizabethtown	21	I	Leeds	8
Elizabethtown Twp. Bridge 8 over the C.N.R.	Concrete rigid frame	1 @ 44'-4"	Hwy. 401 Kingston-Brockville	Elizabethtown	21	I	Leeds	8
Elizabethtown Twp. Bridge 10A	Concrete rigid frame girder	1 @ 105'-8"	Hwy. 401 at Hwy. 29	Elizabethtown	13	I	Leeds	8
Elizabethtown Twp. Bridge 12 over the C.P.R.	Concrete rigid frame	1 @ 56'-10 1/4"	Hwy. 401 Brockville-Prescott	Elizabethtown	10	I	Leeds	8
Elizabethtown Twp. Bridge 13 over Ormond Street	Concrete rigid frame	1 @ 52'-10-5/16"	Hwy. 401 Brockville-Prescott	Elizabethtown	10	I	Leeds	8
Eramosa River Bridge	Concrete rigid frame	30'-0"/40'-0"/30'-0"	Hwy. 7 Guelph-Brampton	Eramosa	4	IV-V	Wellington	4
Esquesing Twp. Bridge 1	Continuous concrete girder	42'-0"/65'-3"/65'-3"/42'-0"	Hwy. 401 Toronto-Milton	Trafalgar and Esquesing	1	IV	Halton	6
Fairbanks Creek Bridge	Concrete rigid frame	1 @ 50'-0"	Hwy. 6 Mt. Forest-Durham	Normanby and Egremont	26-27	I	Grey	5
Himsworth N. Twp. C.N.R. Overhead (N. Bridge) (Candler N.)	Continuous steel beam	2 @ 44'-0"/2 @ 54'-0"/1 @ 60'-0"	Hwy. 11 Candler By-pass	N. Himsworth	2	XXVIII	Parry Sound	13
Himsworth N. Twp. C.N.R. Overhead (S. Bridge) (Candler S.)	Concrete rigid frame	1 @ 24'-0"	Hwy. 11 Line D Candler By-pass	N. Himsworth	2	XXV	Parry Sound	13
Hamilton Twp. Bridge 2 over Gages Creek	Concrete barrel arch	1 @ 40'-0"	Hwy. 401 Port Hope-Trenton	Hamilton	32-33	I	Northumberland	7
Hamilton Twp. Bridge 8 over Dye Works Creek	Concrete barrel arch	1 @ 40'-0"	Hwy. 401 at Town of Cobourg	Hamilton	20	I	Northumberland	7
Hope Twp. Bridge 1	Continuous prestressed beams	35'-0"/105'-0"/35'-0"	Hwy. 401 Bowmanville-Port Hope	Hope and Clarke	35-1	II-I	Durham	7
Hope Twp. Bridge 5	Concrete rigid frame box girder	1 @ 102'-1 1/2"	Hwy. 401 Bowmanville-Port Hope	Hope	22-23	II	Durham	7
Humber River Bridge at Kleinburg	Steel beam	62'-6"/63'-0"/62'-6"	Hwy. 49 Hwy. 27-Hwy. 50	Vaughan	25	VIII-IX	York	6
Innisville Bridge over the Mississippi River	Steel beam	5 @ 74'-0"	Hwy. 15 (T.C.H.) Carileton-Perth	Drummond	20	XI	Lanark	9

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Jackson Creek Bridge	Concrete rigid frame	1 @ 50'-0"	Hwy. 133 (T.C.H.) Springfield-Fowlers Corners	N. Monaghan	1	XII	Peterboro	7
Kakabeka Falls Bridge over the Kaministiquia River	Continuous concrete "T" beam	60'/82'/82'/60'	Hwy. 17 Fort William Kakabeka	Oliver			Thunder Bay	19
Kerr Street Interchange	Retaining wall under existing Oakville Creek Br.		Q.E.W. Toronto-Hamilton	Trafalgar	16	II-III	Halton	6
Kirkfield Bridge over the Trent Canal	Steel rigid frame	1 @ 90'-0"	Hwy. 46 Kirkfield-Cobocok	Eldon	51	IX	Victoria	7
Lakeshore Expressway East-bound Ramp over Hwy. 2	Continuous steel beam	48' 0"/58' 0"/48'-0"	Q.E.W. E.B. Lane Hwy. 2 W.B. Lane					
Laskay Bridge over the Humbler River	Concrete rigid frame	1 @ 50'-0"	Twp. Road, Service Road W. Side of Hwy. 400	King	3	V-VI	York	6
Leeds and Lansdowne Twp. Bridge 1	Concrete rigid frame	1 @ 37'-0"	Hwy. 401 Kingston-Brockville	Leeds and Lansdowne	4	I	Leeds	8
Leeds and Lansdowne Twp. Bridges 2 and 3 over Omanouqui River and 1,000 Isl. Hwy. (C.N.R.)	Continuous haunched steel girder	2 @ 150'-0"	Hwy. 401 Kingston-Brockville	Leeds and Lansdowne	11	I	Leeds	8
Leeds and Lansdowne Twp. Bridge 4, Hwy. 32 Underpass	Concrete rigid frame box girder	1 @ 110'-1 7/8"	Hwy. 401 Kingston-Brockville	Leeds and Lansdowne	12 13	I	Leeds	8
Little Pic River Bridge	Steel deck truss	170'-6"/248'/172'/94'-6"	Hwy. 17 (T.C.H.) Nipigon-Marathon	No. 79			Thunder Bay	19
Little River Bridge Extension	Concrete rigid frame	1 @ 50'-0"	Hwy. 39 Junction 2-Windsor	Sandwich E.	129W-132	I-II	Essex	1
Lynde Creek Bridge	Concrete beam and slab	1 @ 43'-0"	Hwy. 12 Whitby-Brooklin	Whitby	26	IV	Ontario	6
Magpie River Bridge	Steel beam	64'-3"/65'-0"/65'-6"/64'-3"	Hwy. 17 (T.C.H.) Wawa-White River	No. 30		Range 23	Algoma	15
Manitouawadage C.P.R. Overhead	Concrete rigid frame	1 @ 24'-8"	Hwy. 17 (T.C.H.) Marathon-White River	Nos. 72 and 73			Thunder Bay	15
Matchedash Bay Bridge	Continuous steel beam	58'-0"/75'-0"/58'-0"	Hwy. 103 (T.C.H.) Matchedash Bay-Waubesaute	Tay	10	XI	Simcoe	11
Mattagam River Bridge	Continuous through truss	210'-0"/300'-0"/210'-0"	Hwy. 11 at Smooth Rock Falls	Kendrey	25	VIII-IX	Cochrane	16

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Michipicoten River Bridge	Steel plate girder, steel beam approaches	59'-3 1/4" @ 60'-0"/1 @ 100'-0"/1 @ 39'-3"	Hwy. 17 (T.C.H.) Wawa-Sault St. Marie	No. 30	....	Range 22	Algoma	15
Monk Lake Bridge	Concrete barrel arch	1 @ 24'-0"	Sec. Road 500, Monk Lake-Highland Grove	Cardiff	21-22	XIV	Haliburton	11
Montreal River Bridge	Steel plate girder	1 @ 96'-0"	Hwy. 17 (T.C.H.) Sault-Agawa River	No. 29	....	Range 15	Algoma	18
Murray Twp. Bridge 3 (Wooler Road)	Concrete beam and slab	1 @ 65'-2"	Hwy. 401 Port Hope-Trenton	Murray	10	II	Northumberland	7
Muskoka River Bridge	Continuous steel beam (prestressed deck over piers)	67'-0"/94'-0"/67'-0"	Hwy. 103 (T.C.H.) Waubashene-Rootes Bay	Gibson	15	X	Muskoka	11
Nagagami River Bridge	Steel beam	5 @ 55'-0"	Hwy. 11 Hearst-Longlac	McMillan	8	VI	Cochrane	16
Nash Creek Bridge (Hosack Creek) (Morrisburg Bridge)	Prestressed beam and slab	1 @ 51'-5"	Hwy. 2 Morrisburg-Cornwall	Williamsburg	27	I	Dundas	9
Nipissing Junction C.N.R. Overhead	Concrete rigid frame	1 @ 55'-0"	Hwy. 11 Callander-N. Bay	W. Ferris	32-33	XV	Nipissing	13
North Trout Creek Bridge	Steel beam concrete deck	3 @ 45'-0"	Hwy. 17 (T.C.H.) Fort William-Nipigon	Nipigon	6	V	Thunder Bay	19
Ops Twp. C.N.R. Overhead (Lindsay By-pass)	Steel plate girder	108'-8"	Hwy. 36 Lindsay-Burleigh Falls	Ops	18	VI-VII	Victoria	7
Ops Twp. C.N.R. Overhead	Concrete rigid frame	40'-6"	Hwy. 7 (T.C.H.) Lindsay By-pass	Ops	17-18	IV	Victoria	7
Orillia S. Twp. C.N.R. Overhead (Orillia By-pass)	Steel beam	58'-6 1/2"/52'-3"/58'-6"	Orillia By-pass (T.C.H.)	Orillia S.	11	IV	Simcoe	11
Orillia S. Twp. Underpass (Orillia By-pass and Hwys. 11 and 12)	Concrete beam (precast)	4 @ 66'-3 1/2"	Orillia By-pass (T.C.H.) at Junction of Hwys. 11 and 12	Orillia S.	10	II	Simcoe	11
Otasawian River Bridge	Steel beam	53'-5 1/2"/54'-0 1/2"/53'-5 1/4"	Hwy. 11 Hearst-Longlac	Kohler	....	....	Cochrane	16
Oxbow Creek Bridge	Concrete girder	1 @ 70'-2 1/4"	Hwy. 22, Calamity Corners-Jctn Hwys. 7 & 22	Lobo	14	III	Middlesex	2
Prairie River Bridge	Steel deck truss, steel beam approaches	2 @ 40'-0"/1 @ 90'-0"	Hwy. 17 (T.C.H.) Nipigon-Marathon	No. 81	....	....	Thunder Bay	19

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Red Hill Creek Bridge	Concrete rigid frame	3 @ 30'-0"	Hwy. 55 Hamilton Q.E.W.	Saltfleet	30	I	Wentworth	4
Rocky Saugeen River Bridge	Continuous concrete beam and slab	71'-0"/98'-0" / 71'-0"	Hwy. 6 Durham-Owen Sound	Bentinck	16	I	Grey	5
St. Thomas M.C.R. Overhead	Concrete rigid frame	1 @ 71'-4"	Hwy. 3 Aylmer-St. Thomas	Yarmouth	9	VIII	Elgin	2
Saugus River Bridge	Concrete beam and slab (precast, post-stressed)	3 @ 60'-0"	Hwy. 7 (T.C.H.) Lindsay By-pass	Ops	15-16	V	Victoria	7
Savern River Bridge at Port Severn	Concrete rigid frame girder	1 @ 90'-0"	Hwy. 103 (T.C.H.) at Port Severn	Tay-Baxter	18	XII	Simcoe-Muskoka	11
Savern River (Boat Channel) Bridge	Composite arch rib	1 @ 180'-0"	Hwy. 103 (T.C.H.) at Port Severn	Baxter	27	II	Muskoka	11
Savern River (Overflow) Bridge	Prestressed concrete beam	1 @ 73'-0"	Hwy. 103 (T.C.H.) at Port Severn	Baxter	28	II	Muskoka	11
Sidney Twp. Bridges 1 and 2 over Trent Canal and Hwy. 33	Continuous steel plate girder and steel rigid frame approach span	4 @ 140'-0" / 1 @ 55'-0"	Hwy. 401 Windsor-Brockville	Sidney	3	II	Hastings	7
Slys Creek Bridge	Continuous concrete slab	2 @ 24'-10 1/8" / 1 @ 40'-0"	Hwy. 69 (T.C.H.) Parry Sound-Pointe au Baril	Carling	1	I	Parry Sound	11
Spruce Creek Bridge	Timber trestle	2 @ 20'-0" / 1 @ 30'-0"	Hwy. 621 Minahico-Morson	Morson	11	III	Rainy River	20
Steel River Bridge	Steel deck truss	98'-0" / 144'-0" / 98'-0" / & 2 @ 25'-0" Appro. Spans	Hwy. 17 (T.C.H.) Nipigon-Marathon	No. 81	....	..	Thunder Bay	19
Stillwater Creek Bridge	Steel beam	3 @ 45'-0"	Hwy. 17 (T.C.H.) Port William-Nipigon	Nipigon	12-13	IV	Thunder Bay	19
Stoney Creek Bridge at Tillsonbury	Concrete rigid frame box culvert	2 @ 20'-0"	Hwy. 3, Tillsonburg West-St. Thomas	Dereham-S. Norwich	..	..	Oxford	2
Stoney Creek T.H. and B. Railway (Overhead)	Concrete beam and slab	1 @ 20'-0" / 1 @ 52'-0" / 1 @ 46'-6"	Hwy. 20, Burlington-Niagara Falls	Saltfleet	26	IV	Wentworth	4
Styx River Bridge (Smith Creek)	Concrete rigid frame	50'-0"	Hwy. 6 Durham-Owen Sound	Bentinck and Glenelg	2	I	Grey	5
Teton Side Road Underpass	Concrete rigid frame box girder	94'-5"	Hwy. 400 at Anne Street, Barrie	Vaughan	25-26	V	York	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Thessalon C.P.R. Overhead	Concrete rigid frame	2 @ 42'-9"/1 @ 50'-0"	Hwy. 17 (T.C.H.) Iron Bridge-Thessalon	Thessalon	....	S.W. ¼ Sec. 33	Algoma	18
Thessalon River Bridge	Steel plate girder	1 @ 120'-0"	Hwy. 17 (T.C.H.) in Thessalon	Thessalon	...	....	Algoma	18
Toronto Twp. Bridge 11	Continuous concrete beam and slab	38'-0"/63'-0"/63'-0"/38'-0"	Hwy. 401 Toronto-Milton	Toronto	7	I-II	Peel	6
Toronto Twp. Bridge 12	Concrete "T" beam and slab	42'-0"/64'-0"/64'-0"/42'-0"	Hwy. 401 Toronto-Milton	Toronto	8	II-III	Peel	6
Toronto Twp. Bridge 12A over Meadowvale Creek	Concrete rigid frame culvert (box)	2 @ 20'-0"	Hwy. 401 Toronto-Milton	Toronto	8	III	Peel	6
Toronto Twp. Bridge 13 over Credit River	Continuous concrete girder	66'-0"/91'-0"/66'-0"	Hwy. 401 Toronto-Milton	Toronto	9	III	Peel	6
Toronto Twp. Bridge 14	Continuous concrete beam and slab	37'-6"/2 @ 63'-0 ½"/37'-6"	Hwy. 401 Toronto-Milton	Toronto	9	III-IV	Peel	6
Toronto Twp. Bridge 15	Concrete rigid frame	1 @ 36'-5 ¼"	Hwy. 401 Toronto-Milton	Toronto	9	IV West	Peel	6
Toronto Twp. Bridge 17	Concrete rigid frame	1 @ 42'-8 ¼"	Hwy. 401 Toronto-Milton	Toronto	11	V West	Peel	6
Trafalgar Twp. Bridge 4	Concrete rigid frame girder	40'-0"/62'-0"/62'-0"/40'-0"	Hwy. 401 Toronto-Milton	Trafalgar	14-15	IX-X	Halton	6
Trafalgar Twp. Bridge 6	Continuous concrete beam and slab	42'-11"/72'-0"/72'-0"/42'-11"	Hwy. 401 Toronto-Milton	Trafalgar	14-15	VII-VIII	Halton	6
Trafalgar Twp. Bridge 7 over Oakville Creek Tributary	Concrete rigid frame	1 @ 50'-0"	Hwy. 401 Toronto-Milton	Trafalgar	19	VII	Halton	6
Trafalgar Twp. Bridge 8A over Oakville Creek Tributary	Concrete rigid frame box culvert	2 @ 20'-8 ½"	Hwy. 401 Toronto-Milton	Trafalgar	14-15	VIII	Halton	6
Trafalgar Twp. Bridge 9	Concrete girder	40'-0"/62'-0"/62'-0"/40'-0"	Hwy. 401 Toronto-Milton	Trafalgar	14-15	VI-VII	Halton	6
Trafalgar Twp. Bridge 10	Concrete rigid frame	1 @ 34'-2 ¾"	Hwy. 401 Toronto-Milton	Trafalgar	15	V-VI	Halton	6
Trafalgar Twp. Bridge 10A	Concrete rigid frame	1 @ 77'-0"	Hwy. 401 Toronto-Milton	Trafalgar	15	VI	Halton	6
Trout Lake Bridge (Little Penage Lake)	Timber beam	1 @ 27'-0"	Hwy. 549 Hwy. 17-Penage Lake	Louise	5	I	Sudbury	17

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Trout Lake River Bridge	Laminated timber girder-laminated deck	2 @ 39'-6"/9 @ 40'-0"	Hwy. 105 Hwy. 17 Red Lake	Unsurveyed	....	....	Kenora	20
Tyendinaga Twp. Bridge 5 over the Salmon River	Steel beam, prestressed deck	4 @ 75'-0"/1 @ 110'-0"	Hwy. 401 Belleville-Napanee	Tyendinaga	17 and 18	I	Hastings	8
Wabi River Bridge	Timber trestle	2 @ 17'-3"/2 @ 20'-0"/2 @ 19'-3"/1 @ 39'-6"	Hwy. 65 NewLiskeard-Elk Lake	Kerns	11	V	Timiskaming	14
Westminster Twp. Bridge 18	Concrete box girder	1 @ 120'-1 1/2"	Hwy. 401 Tempo-Woodstock	Westminster	56	....	Middlesex	2
West Montrose Bridge over Grand River	Continuous concrete beam and slab	65'-0"/100'- 0"/65'-0"	Hwy. 86 Amberley Guelph	Woolwich	71 and 74	....	Waterloo	3
White River Bridge at Bremner	Continuous steel plate girder	60'-0"/90'-0"/ 60'-0"	Hwy. 17 (T.C.H.) Marathon-White River	No. 70	....	....	Thunder Bay	15

APPENDIX No. 5

COUNTIES

Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
TOTALS TO DATE.....		\$385,296,488.45	\$197,105,704.64

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1958

Provincial Subsidies on 1958 Expenditures Being Paid in the 1958-59 Fiscal Year

COUNTY	YEAR OF ESTABLISHMENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES TO END OF 1958	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB-URBAN ROADS	TOTAL		
Brant.....	1917	89.50	35.00	124.50	\$ 6,340,202.88	\$ 3,368,540.16
Bruce.....	1917	303.53	.....	303.53	9,330,797.54	4,862,585.64
Carleton.....	1910	142.45	107.40	249.85	17,452,630.76	8,950,124.12
Dufferin.....	1918	171.35	.....	171.35	4,090,583.70	2,049,027.40
Elgin.....	1917	245.95	30.00	275.95	8,906,970.03	4,567,145.37
Essex.....	1916	214.98	42.00	256.98	14,199,644.84	7,352,436.76
Frontenac.....	1907	121.90	43.60	165.50	4,386,681.96	2,186,086.91
Grey.....	1918	295.52	34.70	330.22	10,356,924.82	5,269,096.92
Haldimand.....	1912	163.64	.....	163.64	8,343,952.55	4,198,440.12
Halton.....	1907	148.47	.....	148.47	6,594,909.83	3,288,459.33
Hastings.....	1904	262.09	6.20	268.29	7,532,278.57	3,704,559.35
Huron.....	1917	390.80	.....	390.80	10,239,375.94	5,459,819.24
Kent.....	1917	359.43	24.35	383.78	15,970,874.21	8,441,957.34
Lambton.....	1918	230.17	22.06	252.23	9,426,626.96	4,866,541.28
Lanark.....	1903	226.40	6.00	232.40	6,389,084.45	3,245,335.49
Leeds and Grenville...	1910	138.20	36.20	174.40	8,797,038.59	4,304,448.94
Lennox and Addington	1906	350.68	.....	350.68	5,791,418.12	2,975,676.84
Lincoln.....	1904	169.43	23.55	192.98	9,813,624.37	4,809,068.68
Middlesex.....	1906	448.87	64.25	513.12	17,603,451.79	9,125,694.71
Norfolk.....	1917	242.13	.....	242.13	10,057,542.04	5,125,085.06
Northumberland and Durham.....	1918	286.95	12.75	299.70	9,188,298.11	4,737,144.45
Ontario.....	1918	234.35	21.70	256.05	7,834,996.38	4,024,774.94
Oxford.....	1904	199.81	15.34	215.15	9,778,303.89	4,882,356.38
Peel.....	1907	152.82	.....	152.82	11,034,033.50	5,654,597.17
Perth.....	1907	180.70	23.55	204.25	6,746,563.46	3,445,928.90
Peterborough.....	1919	130.30	70.00	200.30	5,207,155.61	2,786,755.83
Prescott and Russell..	1917	325.53	.....	325.53	10,926,106.85	5,446,898.88
Prince Edward.....	1907	187.83	.....	187.83	5,372,006.86	2,656,798.98
Renfrew.....	1918	219.17	.....	219.17	9,358,816.34	4,849,932.21
Simcoe.....	1903	262.80	.....	262.80	11,216,846.03	5,611,758.53
Stormont, Dundas and Glengarry.....	1917	402.10	61.00	463.10	13,265,489.76	6,691,762.22
Victoria.....	1917	234.68	.....	234.68	6,388,663.07	3,310,108.35
Waterloo.....	1908	100.47	115.73	216.20	11,752,066.42	6,140,485.25
Welland.....	1912	131.90	33.50	165.40	13,082,719.13	6,691,164.43
Wellington.....	1903	351.85	38.50	390.35	13,744,292.84	7,229,390.32
Wentworth.....	1903	61.95	120.51	182.46	12,783,173.55	6,399,232.70
York.....	1911	.....	182.86	182.86	35,992,342.70	18,396,485.44
TOTALS.....	.....	8,178.70	1,170.75	9,349.45	\$385,296,488.45	\$197,105,704.64

APPENDIX

SUMMARY OF COUNTY

(Government Subsidies Paid)

NAME OF COUNTY	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 190,864.60	\$ 84,935.15	\$ 114,936.31	\$ 10,766.08
Bruce.....	370,553.69	99,500.00	120,916.99	4,524.82
Carleton.....	525,322.75	198,776.38	149,327.71	15,738.89
Dufferin.....	128,084.34	115,764.15	24,738.72	155.47
Elgin.....	310,581.34	211,596.82	114,749.81	29,333.93
Essex.....	718,875.06	293,073.32	115,951.49	5,255.83
Frontenac.....	135,315.07	114,744.80	10,335.95	1,429.87
Grey.....	172,017.67	303,702.78	63,013.78	5,268.41
Haldimand.....	406,946.80	98,426.10	17,945.01	1,986.57
Halton.....	385,714.43	189,362.27	33,247.71	3,553.06
Hastings.....	105,954.79	196,687.24	16,867.91	4,236.11
Huron.....	367,262.41	186,907.27	156,743.14	5,200.70
Kent.....	605,180.01	162,114.49	157,806.17	11,393.64
Lambton.....	602,023.44	164,913.21	190,246.21	37,224.62
Lanark.....	155,489.77	106,790.94	32,551.25	10,655.59
Leeds and Grenville.....	168,731.20	234,755.68	4,363.71	10,398.27
Lennox and Addington.....	74,130.53	116,331.64	27,378.44	439.86
Lincoln.....	385,670.70	197,094.36	60,096.49	1,050.16
Middlesex.....	1,115,082.12	356,646.66	285,217.16	13,113.53
Norfolk.....	375,559.69	234,360.09	71,550.25	3,437.43
Northumberland and Durham.....	449,040.21	141,217.23	100,160.24	854.96
Ontario.....	313,672.75	205,952.66	103,642.29	9,450.79
Oxford.....	801,081.11	244,846.63	105,304.44	2,980.01
Peel.....	1,011,897.91	212,011.68	103,635.39	1,698.64
Perth.....	247,877.37	187,569.65	41,813.48	2,697.26
Peterborough.....	199,078.61	91,981.40	35,804.28	5,937.73
Prescott and Russell.....	281,781.96	137,292.89	55,023.97	21,639.14
Prince Edward.....	194,847.06	115,835.34	11,918.62	243.20
Renfrew.....	70,580.86	174,864.30	91,545.54	7,296.53
Simcoe.....	337,402.63	283,877.03	12,616.89	4,472.75
Stormont, Dundas and Glengarry.....	343,888.37	98,180.58	27,739.98	9,337.89
Victoria.....	151,617.69	155,135.26	33,382.31	12,177.24
Waterloo.....	481,709.01	198,840.83	224,059.29	6,614.88
Welland.....	457,967.01	194,631.04	171,082.46	16,698.48
Wellington.....	332,856.37	399,050.24	132,383.74	16,236.33
Wentworth.....	369,545.14	409,323.35	104,670.87	21,561.81
York.....	1,256,919.11	241,364.93	160,457.99	6,420.66
TOTALS.....	\$14,601,123.58	\$ 7,158,458.39	\$ 3,283,225.99	\$ 321,481.14

SUMMARY OF METROPOLITAN

Metropolitan Toronto.....	\$10,131,934.74	\$ 1,656,874.92	\$ 3,131,642.07	\$ 35,606.97
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No. 7

ROAD EXPENDITURES—1958

in the 1958-1959 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	APPROVED EXPENDITURE			GOVERNMENT SUBSIDY 50% AND 80%
	CONSTRUCTION	MAINTENANCE	TOTAL	
\$ 26,639.88	\$ 305,800.91	\$ 122,341.11	\$ 428,142.02	\$ 251,781.73
75,975.68	491,470.68	180,000.00	671,470.68	373,367.88
79,416.83	674,650.46	293,932.10	968,582.56	533,811.26
33,830.45	152,823.06	149,750.07	302,573.13	158,754.82
13,359.04	425,331.15	254,289.79	679,620.94	383,035.59
16,980.89	834,826.55	315,310.04	1,150,136.59	611,430.49
27,496.06	145,651.02	143,670.73	289,321.75	148,190.61
80,223.99	235,031.45	389,195.18	624,226.63	332,597.97
6,227.55	424,891.81	106,640.22	531,532.03	271,745.49
36,049.98	418,962.14	228,965.31	647,927.45	335,003.95
34,024.08	122,822.70	234,947.43	357,770.13	185,216.28
81,211.56	524,005.55	273,319.53	797,325.08	447,245.69
4,286.32	762,986.18	177,794.45	940,780.63	521,150.26
7,667.83	792,269.65	209,805.66	1,002,075.31	569,278.90
29,084.65	188,041.02	146,531.18	334,572.20	180,248.15
30,169.20	173,094.91	275,323.15	448,418.06	228,637.62
21,242.22	101,508.97	138,013.72	239,522.69	128,106.83
26,118.40	445,767.19	224,262.92	670,030.11	353,359.06
58,329.05	1,400,299.28	428,089.24	1,828,388.52	1,003,693.47
27,691.97	447,109.94	265,489.49	712,599.43	378,796.02
57,927.81	549,200.45	200,000.00	749,200.45	404,904.79
60,130.91	417,315.04	275,534.36	692,849.40	380,352.62
33,344.66	906,385.55	281,171.30	1,187,556.85	626,263.76
48,865.96	1,115,533.30	262,576.28	1,378,109.58	720,655.00
11,954.80	289,690.85	202,221.71	491,912.56	259,309.50
34,455.68	234,882.89	132,374.81	367,257.70	196,151.45
49,226.68	336,805.93	208,158.71	544,964.64	295,481.25
23,267.66	206,765.68	139,346.20	346,111.88	176,704.49
33,843.13	162,126.40	216,003.96	378,130.36	218,717.81
86,206.18	350,019.52	374,555.96	724,575.48	367,414.64
78,508.83	371,628.35	186,027.30	557,655.65	289,951.19
27,681.10	185,000.00	194,993.60	379,993.60	203,664.67
51,130.16	705,768.30	256,585.87	962,354.17	550,379.33
91,673.60	629,049.47	303,003.12	932,052.59	522,360.58
111,291.63	465,240.11	526,578.20	991,818.31	540,495.17
40,070.11	474,216.01	470,955.27	945,171.28	510,455.44
125,073.07	1,417,377.10	372,858.66	1,790,235.76	945,181.48
\$1,680,677.10	\$17,884,349.57	\$9,160,616.63	\$27,044,966.20	\$14,603,895.24

ROAD EXPENDITURES—1958

\$ 703,830.83	\$13,263,576.81	\$2,396,312.72	\$15,659,889.53	\$ 7,829,944.77
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APPENDIX No. 8 ORGANIZED TOWNSHIPS

Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
TOTALS.....		\$388,051,575.03	\$201,830,893.00

NOTE. — 573 Townships, 23 Improvement Districts and 31 Indian Reserves are represented in the above expenditures for 1958.

APPENDIX No. 9 CITIES, TOWNS AND VILLAGES

Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
TOTALS.....		\$205,591,198.70	\$ 80,722,184.28

NOTE. — 29 Cities, 8 Separated Towns, 149 Towns and 154 Villages are represented in the above expenditure for 1958.

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1958
ROADS UNDER LOCAL AUTHORITY

COUNTY	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT CONCRETE BRICK ETC.	TOTAL
Brant.....	1.00	43.29	67.73	23.02	22.76	16.11	173.91
Bruce.....	7.15	58.42	45.13	16.91	11.14	2.94	141.69
Carleton.....	46.77	88.43	52.30	111.84	182.26	.....	481.60
Dufferin.....	6.80	7.70	5.90	.....	10.70	3.20	34.30
Elgin.....	7.90	15.99	15.40	28.21	23.35	3.35	94.20
Essex.....	41.34	65.77	34.24	37.18	183.70	151.30	513.53
Frontenac.....	0.82	.....	18.29	16.08	54.00	0.30	89.49
Grey.....	29.86	46.09	68.32	6.72	12.92	9.25	173.16
Haldimand.....	5.24	17.15	4.57	11.22	15.86	0.34	54.38
Halton.....	17.35	129.06	84.08	12.60	41.22	7.08	291.39
Hastings.....	8.10	12.40	48.80	1.60	11.41	0.13	82.44
Huron.....	2.96	26.85	30.28	37.32	12.21	5.68	115.30
Kent.....	3.74	15.17	41.42	13.56	61.42	24.65	159.96
Lambton.....	3.81	86.36	64.34	32.82	39.14	9.07	235.54
Lanark.....	11.72	13.94	16.10	26.47	30.85	1.00	100.08
Lennox-Addington.....	.....	5.82	17.45	.....	3.10	.....	26.37
Leeds and Grenville	17.39	21.90	3.47	30.26	20.32	23.45	116.79
Lincoln.....	3.01	26.31	13.04	28.67	43.23	45.92	160.18
Middlesex.....	9.33	46.60	91.26	70.33	.....	6.60	224.12
Norfolk.....	3.78	15.26	29.97	17.25	3.40	3.20	72.86
Northumberland and Durham.....	4.75	63.70	55.45	29.76	35.90	5.00	194.56
Ontario.....	8.36	32.45	123.23	50.59	49.28	10.21	274.12
Oxford.....	7.92	25.47	35.20	49.27	12.32	11.52	141.70
Peel.....	0.94	18.36	4.40	28.48	20.78	0.18	73.14
Perth.....	17.15	55.56	14.33	20.62	36.77	2.84	147.27
Peterborough.....	.....	27.97	50.36	10.95	32.90	4.37	126.55
Prescott and Russell	3.10	6.35	7.00	6.18	9.00	0.50	32.13
Prince Edward.....	.....	0.21	8.91	2.87	8.36	.....	20.35
Renfrew.....	17.73	20.80	24.95	7.15	44.75	0.15	115.53
Simcoe.....	24.84	114.33	41.41	27.06	60.60	7.59	275.83
Stormont, Dundas and Glengarry.....	4.15	51.45	8.30	31.10	30.85	18.20	144.05
Victoria.....	1.00	12.00	35.80	3.40	23.75	.....	75.95
Waterloo.....	28.83	55.20	96.02	101.92	123.26	23.15	428.38
Welland.....	3.00	15.86	48.58	66.47	83.48	18.61	236.00
Wellington.....	16.60	28.55	63.11	53.78	18.90	29.02	209.96
Wentworth.....	3.01	51.42	30.29	115.64	242.00	3.12	445.48
York.....	1.04	42.30	23.08	0.57	19.56	.....	86.55
TOTALS—Counties	370.49	1,364.49	1,422.51	1,127.87	1,635.45	448.03	6,368.84
Metro. Toronto Area	8.86	4.46	6.33	6.45	560.36	25.89	612.35
DISTRICTS							
Algoma.....	5.50	78.13	.....	5.32	37.10	5.10	131.15
Cochrane.....	.....	29.35	21.00	26.24	19.78	1.80	98.17
Kenora.....	9.10	34.17	10.56	0.25	26.95	.....	81.03
Manitoulin.....	5.50	12.20	1.60	1.70	.....	.....	21.00
Muskoka.....	2.63	57.46	24.87	21.20	2.00	2.75	110.91
Nipissing.....	6.45	31.22	27.60	1.00	45.72	1.50	113.49
Parry Sound.....	.....	44.16	4.00	10.55	12.10	.....	70.81
Rainy River.....	5.65	29.26	10.19	2.72	1.60	1.67	51.09
Sudbury.....	2.80	45.02	64.67	24.21	32.06	1.00	169.76
Pemiskaming.....	.....	28.25	9.50	14.25	14.35	.....	66.35
Thunder Bay.....	3.01	62.93	93.60	10.73	82.27	15.63	268.17
TOTALS—Districts	40.64	452.15	267.59	118.17	273.93	29.45	1,181.93
GRAND TOTALS	419.99	1,821.10	1,696.43	1,252.49	2,469.74	503.37	8,163.12

APPENDIX

MILEAGE OF ROAD SURFACES

COUNTY	COUNTY ROADS				
	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE
Brant.....		26.25	4.25	94.00	.....
Bruce.....		148.27		128.11	26.50
Carleton.....		74.35	26.20	36.13	113.17
Dufferin.....		159.50		4.65	7.00
Elgin.....		119.20	12.70	3.10	140.95
Essex.....		87.13	47.50	52.51	30.42
Frontenac.....		82.30	68.95	14.25	.....
Grey.....		292.45		25.45	7.00
Haldimand.....	1.50	58.40	96.21	.....	6.12
Halton.....		70.88	32.05	11.82	31.62
Hastings.....		177.17	50.75	16.35	21.72
Huron.....		221.70		163.10	6.00
Kent.....		86.49		6.06	281.36
Lambton.....	0.67	126.63		57.50	61.23
Lanark.....		154.60	5.10	61.25	11.45
Lennox and Addington.....		42.00	58.70	16.40	57.30
Leeds and Grenville.....		167.60	9.50	106.24	66.54
Lincoln.....		3.20	103.13	68.06	8.75
Middlesex.....		247.31		210.57	18.55
Norfolk.....		19.02		222.30	.....
Northumberland and Durham.....		193.55	2.05	63.90	39.60
Ontario.....		91.83	26.55	96.68	38.12
Oxford.....		109.00		106.15	.....
Peel.....		64.10	26.18	11.73	46.58
Perth.....		123.95		65.05	15.25
Peterborough.....		148.70		45.30	6.30
Prescott and Russell.....	2.95	208.35	27.45	59.20	27.58
Prince Edward.....		92.53	33.87	45.48	7.35
Renfrew.....		65.36		90.86	61.60
Simcoe.....		197.60	2.70	25.05	37.45
Stormont, Dundas and Glengarry.....		176.00	37.45	198.90	50.15
Victoria.....		132.35		99.33	3.00
Waterloo.....		76.70	78.70	32.20	28.60
Welland.....		6.20	85.30	37.00	35.10
Wellington.....		172.55	102.55	97.45	17.80
Wentworth.....		9.70	46.58	125.08	1.10
York.....		34.71	23.38	60.61	63.66
TOTALS — Counties.....	5.12	4,267.63	1,007.80	2,557.82	1,374.92
DISTRICTS					
Algoma.....					
Cochrane.....					
Haliburton.....					
Kenora.....					
Manitoulin.....					
Muskoka.....					
Nipissing.....					
Parry Sound.....					
Rainy River.....					
Sudbury.....					
Temiskaming.....					
Thunder Bay.....					
TOTALS — Districts.....					
Unorganized Townships.....					
METROPOLITAN AREA					
Metropolitan Toronto Area.....	5.09	5.61	22.89	12.25	234.50
GRAND TOTALS.....	10.21	4,273.24	1,030.69	2,570.07	1,609.42

AT THE END OF 1958

TOWNSHIP ROADS								
CEMENT, CON- CRETE	TOTAL	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT, CON- CRETE	TOTAL
.....	124.50	47.95	457.50	24.70	6.75	536.90
0.65	303.53	82.00	1,692.50	35.00	4.50	8.50	1,822.50
.....	249.85	172.05	851.80	22.80	5.90	30.35	1,082.90
0.20	171.35	64.00	484.00	210.00	758.00
.....	275.95	2.04	866.09	13.00	881.13
39.42	256.98	24.55	860.72	104.87	3.58	35.36	38.26	1,067.34
.....	165.50	311.85	610.95	5.70	7.70	2.30	938.50
5.32	330.22	124.50	1,888.20	63.00	2,075.70
1.41	163.64	64.55	505.77	43.20	6.75	620.27
2.10	148.47	3.50	334.09	68.09	4.86	1.25	411.79
2.30	268.29	319.00	1,180.50	11.50	5.00	1.68	1,517.68
.....	390.80	74.25	1,496.85	2.75	20.35	7.40	1.00	1,602.60
9.87	383.78	50.78	1,212.14	3.00	3.31	0.65	1,269.88
6.20	252.23	172.64	1,180.92	7.30	29.68	0.41	1,390.95
.....	232.40	488.40	511.25	3.70	3.50	1,006.85
.....	174.40	230.70	408.56	7.75	0.50	0.54	648.05
0.80	350.68	500.25	759.69	3.00	38.60	23.40	1,324.94
9.84	192.98	96.26	426.14	58.53	27.05	5.49	4.12	617.59
36.69	513.12	67.94	1,577.47	65.84	5.97	0.40	1,717.62
0.81	242.13	132.20	746.69	15.28	96.26	990.43
0.60	299.70	268.50	1,858.40	71.30	96.30	19.75	2,314.25
2.87	256.05	213.30	824.46	21.16	17.20	1,076.12
.....	215.15	1,080.07	11.73	1,091.80
4.23	152.82	63.18	542.83	104.02	8.62	718.65
.....	204.25	29.75	1,013.00	0.75	0.25	1,043.75
.....	200.30	167.10	861.30	16.00	1,044.40
.....	325.53	559.65	471.40	1.20	1,032.25
8.60	187.83	26.60	329.45	47.25	6.40	1.00	410.70
1.35	219.17	1,011.15	675.11	2.00	7.65	1,695.91
.....	262.80	269.28	1,847.47	4.05	1.80	33.30	2,155.90
0.60	463.10	494.80	849.35	1.20	5.40	4.25	1,355.00
.....	234.68	167.30	744.10	911.40
.....	216.20	7.75	584.50	1.25	13.25	606.75
1.80	165.40	253.32	408.83	165.54	58.89	27.94	0.80	915.32
.....	390.35	87.85	1,150.95	1.80	0.50	1,241.10
.....	182.46	26.85	500.35	38.40	8.62	574.22
0.50	182.86	33.85	859.21	14.50	15.60	33.11	956.27
136.16	9,349.45	6,709.64	32,652.61	1,238.75	490.51	285.92	47.98	41,425.41
.....	182.25	636.98	8.32	55.92	5.10	888.57
.....	72.25	522.66	8.00	14.39	2.50	619.80
.....	192.35	238.20	25.00	455.55
.....	28.00	180.69	208.69
.....	81.50	452.65	1.60	2.70	537.95
.....	337.35	476.79	74.21</	

APPENDIX No. 12 SUMMARY OF EXPENDITURES ON URBAN STREETS—1958

Approved 1958 Expenditures by Cities, Towns, and Villages under Part VII of the Highway Improvement Act

MUNICIPAL ROAD DISTRICT No.	APPROVED EXPENDITURES — 1958				GOVERNMENT SUBSIDY 33⅓%, 50% AND 80%
	CITIES (29) SEP. TOWNS (8)	TOWNS (149)	VILLAGES (154)	URBAN TOTAL (340)	
1	\$ 1,369,230.67	\$ 321,815.83	\$ 158,702.18	\$ 1,849,748.68	\$ 709,621.52
2	1,718,084.15	298,728.39	81,537.27	2,098,349.81	763,791.44
3	1,534,816.36	453,415.00	97,375.27	2,085,606.63	806,220.07
4	3,904,674.91	690,151.40	129,788.53	4,724,614.84	1,744,903.55
5	130,704.73	223,165.18	54,799.42	408,669.33	191,514.51
6	3,765,102.81	1,705,471.23	347,631.88	2,053,103.11	1,063,184.65
6 M.T.A.		274,029.55	350,955.56	4,390,087.92	1,567,549.45
7	540,641.00	309,386.67	83,875.65	933,903.32	385,216.45
8	957,371.12	34,935.48	120,659.00	1,112,965.60	409,873.57
9	4,093,699.84	302,439.57	95,371.09	4,491,510.50	1,584,634.25
10	295,088.36	295,088.36	114,932.61	410,020.97	242,350.34
11	317,647.23	317,647.23	79,609.15	1,448,362.39	566,343.58
12	1,051,106.01	63,938.46	18,881.33	82,819.79	44,064.51
13	130,501.81	105,433.55	4,706.49	240,641.85	99,726.94
14	263,115.30	263,115.30	1,004.80	264,120.10	133,387.02
16	369,564.63	369,564.63	.....	369,564.63	185,344.49
17	1,056,803.82	236,533.70	.....	1,293,337.52	478,526.66
18	969,634.00	51,327.42	1,544.78	1,022,506.20	351,225.09
19	558,444.17	52,214.36	.....	610,658.53	212,527.92
20	.....	340,548.90	.....	340,548.90	183,528.50
TOTALS.....	\$21,780,815.40	\$ 6,708,950.21	\$ 1,741,375.01	\$30,231,140.62	\$11,723,534.51

APPENDIX No. 13

TYPES OF SURFACES ON THE KING'S HIGHWAYS

(As of December 31, 1958)

COUNTY OR DISTRICT	BITUMINOUS		MULCH	GRAVEL	TOTAL
	CONCRETE	PAVEMENT			
Algoma.....	29.41	127.04	130.27	55.59	342.31
Brant.....	20.43	54.86	9.03	.....	84.32
Bruce.....	10.04	110.66	24.47	23.90	169.07
Carleton.....	0.32	126.14	3.03	.....	129.49
Cochrane.....	1.59	193.87	104.65	119.81	419.92
Dufferin.....	20.48	44.97	.....	.....	65.45
Dundas.....	.....	60.41	0.10	7.21	67.72
Durham.....	.....	94.22	.....	21.51	115.73
Elgin.....	14.14	93.00	3.21	5.76	116.11
Essex.....	56.84	129.56	18.92	.....	205.32
Frontenac.....	0.41	105.78	32.51	27.80	166.50
Glengarry.....	.....	58.53	0.40	.....	58.93
Grenville.....	.....	46.36	.....	.....	46.36
Grey.....	5.29	118.64	0.46	19.65	144.04
Haldimand.....	0.27	75.25	2.21	.....	77.73
Haliburton.....	.....	67.86	20.85	22.80	111.51
Halton.....	4.47	71.65	4.74	.....	80.86
Hastings.....	.....	130.44	105.36	7.44	243.24
Huron.....	8.29	172.30	1.18	21.48	203.25
Kenora.....	.....	167.33	32.25	288.49	488.07
Kent.....	24.04	142.96	.....	6.52	173.52
Lambton.....	26.13	125.96	.....	2.12	154.21
Lanark.....	.....	86.44	.....	7.06	93.50
Leeds.....	11.59	154.02	5.59	.....	171.20
Lennox and Addington.....	.....	66.89	59.99	.....	126.88
Lincoln.....	4.51	55.45	18.89	0.85	79.70
Manitoulin.....	.....	.....	22.10	33.75	55.85
Middlesex.....	16.06	185.15	7.18	16.67	225.06
Muskoka.....	.....	124.07	59.83	.....	183.90
Nipissing.....	9.17	198.62	85.62	65.53	358.94
Norfolk.....	4.95	57.56	0.68	.....	63.19
Northumberland.....	.....	94.35	14.08	2.35	110.78
Ontario.....	35.82	101.78	13.22	1.35	152.17
Oxford.....	8.12	99.05	1.60	25.64	134.41
Parry Sound.....	0.75	57.25	85.07	56.66	199.73
Peel.....	5.42	76.97	17.21	13.09	112.69
Perth.....	5.70	115.04	9.59	2.13	132.46
Peterborough.....	7.95	62.58	28.31	26.10	124.94
Prince Edward.....	0.29	33.22	13.89	11.23	58.63
Prescott.....	1.94	73.43	0.50	.....	75.87
Rainy River.....	.....	80.02	40.87	0.84	121.73
Renfrew.....	13.68	157.15	97.56	16.63	285.02
Russell.....	1.36	36.57	0.88	1.10	39.91
Simcoe.....	9.52	267.97	4.76	13.05	295.03
Stormont.....	.....	32.43	1.37	0.50	34.30
Sudbury.....	2.31	130.93	47.62	90.72	271.58
Timiskaming.....	.....	116.46	68.26	66.74	251.46
Thunder Bay.....	.....	459.53	46.42	170.17	676.12
Victoria.....	.....	97.60	42.93	16.67	157.20
Waterloo.....	5.86	53.50	8.51	10.35	78.22
Welland.....	30.31	69.18	10.98	0.30	110.77
Wellington.....	9.57	114.15	5.57	9.22	138.51
Wentworth.....	4.68	131.89	21.74	8.98	167.29
York.....	5.58	94.88	33.99	5.39	139.84
Metropolitan Toronto.....	7.01	44.21	2.06	.....	53.28
TOTALS.....	424.03	5,846.13	1,370.51	1,303.15	8,943.82

APPENDIX No. 13A**SUMMARY OF KING'S HIGHWAY PAVEMENTS BY HIGHWAY DISTRICTS**

(As at December 31, 1958)

DISTRICT	CONCRETE	BITUMINOUS PAVEMENT	MULCH	GRAVEL	TOTAL
Chatham.....	108.81	408.88	18.92	6.52	543.13
London.....	61.35	425.41	11.52	29.35	527.63
Stratford.....	29.40	466.70	26.00	76.46	598.56
Hamilton.....	49.72	438.92	72.82	10.33	571.79
Owen Sound.....	35.82	383.79	24.93	56.42	500.96
Toronto.....	50.24	338.20	66.01	7.37	461.82
Port Hope.....	16.16	453.79	77.20	77.86	625.01
Kingston.....	12.00	462.07	97.05	32.80	603.92
Ottawa.....	17.30	519.01	6.28	15.87	558.46
Pancroft.....	.....	127.77	233.31	32.48	393.56
Huntsville.....	.....	302.96	114.58	69.31	486.85
North Bay.....	9.92	235.20	119.35	68.26	432.73
New Liskeard.....	1.59	190.36	130.50	113.73	436.18
Cochrane.....	.....	188.66	42.41	74.29	305.36
Sudbury.....	2.31	105.52	71.42	71.20	250.45
Sault Ste. Marie.....	29.41	146.28	138.67	102.87	417.23
Fort William.....	.....	440.05	46.42	168.70	655.17
Kenora.....	.....	212.56	73.12	289.33	575.01
TOTALS.....	424.03	5,846.13	1,370.51	1,303.15	8,943.82

APPENDIX No. 13B**TYPES OF SURFACES ON THE SECONDARY HIGHWAYS**

(As at December 31, 1958)

COUNTY OR DISTRICT	BITUMINOUS PAVEMENT	MULCH	GRAVEL	TOTAL
Algoma.....	17.0	272.1	289.1
Cochrane.....	6.1	119.6	125.7
Frontenac.....	6.3	20.0	26.3
Haliburton.....	34.0	55.0	89.0
Hastings.....	9.5	34.9	44.4
Kenora.....	140.4	140.4
Lanark.....	11.9	11.9
Lennox and Addington.....	5.5	.....	5.5
Manitoulin.....	38.7	103.0	141.7
Muskoka.....	6.2	55.2	17.8	79.2
Nipissing.....	4.4	63.9	68.3
Parry Sound.....	57.5	93.5	151.0
Peterborough.....	5.1	48.3	53.4
Rainy River.....	7.9	208.1	216.0
Renfrew.....	29.3	62.6	91.9
Sudbury.....	18.8	40.3	247.1	306.2
Timiskaming.....	21.3	162.3	183.6
Thunder Bay.....	5.0	21.5	359.2	385.7
Victoria.....	18.9	47.6	66.5
TOTALS.....	30.0	378.5	2,067.3	2,475.8

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1958
(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1958-59
8R	Eagle Lake Road	9.0	Machar	Parry Sound	\$ 40,115.76
43R	Lighthouse Beach Road	8.5	North Himswoth	Parry Sound	29,681.12
40R	North and South Parlee Road	13.0	Needing Municipality	Thunder Bay	14,443.71
82R	Bernard Lake Road	1.4	Strong	Parry Sound	8,194.59
96	Ridout River Road	20.0	County	Leeds and Grenville	86,537.59
106	Church Line Road	4.7	Galway and Cavendish	Leeds and Grenville	9,000.64
121R	South Trunk Road	13.0	Ferris East and Himswoth	Neiderborough	6,038.27
160	Platcher Lake Road	17.65	Sherborne, McClintock and Livingstone	Haldimand	36,191.57
170	Port Road	11.0	Radian	Frontenac	82,789.25
177	Hartwood Lake-Mayo Road	5.0	Davies	Renfrew	55,737.38
178	Marathon Lake Road	10.0	Sherbrooke South	Lanark	9,984.94
192	Highway 3, Bellinghoke Road	8.5	Cardiff	Lanark	34,987.21
203	Highway 3, Crows Kid's Corners Road	10.0	County	Haldimand	26,528.19
205	Proctor Pt. Bay Oxenden Road	17.5	Keppel	Grey	71,372.40
308	Long Point Park Approach Road	2.6	Long Point Park Commission	Norfolk	216.43
309	Casselman Road	6.0	Paipoonge	Thunder Bay	2,107.79
214	Bossmans Narrows Road	8.9	Oro	Hastings	2,519.60
216	Boundary Line Road	7.0	Elizabethtown	Leeds and Grenville	2,960.75
235	Lyn Roy's Corners Road	4.5	Bromley	Renfrew	6,216.73
236	Oscola, Bailey's Corners Road	2.0	Faraday	Hastings	4,744.74
240	Lower Faraday Road	12.5	Needon and Garson	Sudbury	12,158.08
242	Bancroft Drive	5.1	County	Prince Edward	63,458.56
248	Curry Place Rednessville Road	5.0	Jaffray and Melick	Kenora	7,356.87
263	Anderson Road and Loop	5.0	Griffith and Matawathan	Renfrew	15,264.48
270	Russell Embury Road	13.5	County	Prescott and Russell	37,917.88
271	Foxborough Road, Marloe Southerly	4.4	County	Hastings	76,562.82
274	Houghton Bay Road	4.8	Bastard and Burgess	Leeds and Grenville	10,038.76
285	Escoff Rockport Road	5.7	Escoff Front	Leeds and Grenville	16,145.42
286	Martin Bird-Larler Lake-Englehart Road	4.0	Larler Lake Municipality	Temiskaming	4,998.50
289	Wallee Lake Road	12.2	County	Frontenac	95,913.08
290	Highway 43, Maxville-Cone XX XXI Road	8.25	County	Stormont, Dundas and Glengarry	22,046.10
291	Kelly's Corner's Colden Road	7.5	County	Renfrew	173,362.76
292	Hastings Campbellford		County	Northumberland and Durham	406.49 C.
294	Millhaven Road		County	Lennox and Addington	222.40 C.
314	Dean Lake Road	2.5	Ernestown	Algonia	44,361.56
315	Mountain Bay Road	4.2	Thompson	Thunder Bay	28,856.70
317	Sturgeon Bay Road	5.0	Needing	Thunder Bay	10,674.06
318	John Street Road	7.0	Blake	Thunder Bay	16,383.39
323	Merrickville, easterly	3.5	Oliver	Thunder Bay	30,827.38
321B	Lanark Elphin Road	12.0	Montague	Lanark	100,435.91
331	Burney Wentworth Road		County	Norfolk	148.47 C.
334	Nindenova, Southerly Road	4.5	Percy and Haldimand	Northumberland and Durham	6,000.00
335	Concession 11, Burris Road	5.0	Carnarvon	Manitowlin	6,738.28
336	Highway 3, Highway Road	4.5	LaValle	Rainy River	50,747.33
339	Highway 2, Cantown Road	3.0	County	Kent	37,603.50
357	County Road 12B Relocation	4.0	County	Leeds and Grenville	77,761.63

R — Indicates that the project was previously designated, built and revoked and has been re-designated for further improvement.
B — Indicates proportion of this road under construction in the jurisdiction noted.

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1958 (Continued)
(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1958-59
358	Lake Dore Golden Lake Road	9.0	County	Renfrew	2,333.67
361	Westport Bedford Mills Road	5.3	County	Leeds and Grenville	35,380.00
364	Flower Station Road	6.8	Lavant	Lanark	12,000.00
365	St. Eugene, Easterly Road	7.95	County	Prescott and Russell	31,421.08
366	Fourmier Routhier Road	7.3	County	Prescott and Russell	7,026.48
371	County Road 16 (part)	4.0	County	Stormont, Dundas and Glengarry	4,914.95
375	Highway 69 to Longford Mills Road	5.5	County	Ontario	2,018.20
379	Long Lake Road	5.0	Waters	Sudbury	9,909.13
382	Callion Grillin's Corners Road	4.12	Bayham	Elgin	45,002.52
384	Schubme Mount Forest Road	25.8	County	Wellington, Grey, Dufferin	477,549.53
385	Croydon-Reidville Road	5.5	Camden East	Lennox and Addington	26,000.00
387	Sutton Avenue Extension	1.5	Atikokan	Kainy River	515.13 Cr.
388	Concession 1 H	1.5	Tiny	Simcoe	11,937.80
389	Highway 400 to Cookstown	2.4	County	Simcoe	43,602.01
391	Kennelley's Corner s-Douglas	3.25	Bromley and Admaston	Renfrew	8,000.00
392	Tamworth Centreville	7.0	County	Lennox and Addington	30,392.30
397	Highway 68 to Twin Lake	3.25	Hudson	Teniskaming	7,526.11
398	Hiawatha Road	3.5	Pontabec	Peterborough	15,460.07
400	Desert Lake Road	4.0	Portland	Frontenac	15,452.49
401	Stierna 12 to 21	1.25	Neelung	Thunder Bay	29,852.85
402	Red Rock Road	2.7	Red Rock Improvement District	Thunder Bay	29,852.85
403	St. Ignace	4.5	North Grenier	Carleton	5,516.50
404	Rideau River Road	6.5	St. Ignace	Carleton	5,674.43
407	John Street Road, McIntyre	7.5	Shediac Municipality	Thunder Bay	4,158.21
409	Road, Huntville Road	8.0	Cardinal	Muskoka	47,137.38
410	Nir Road, Conc. I and II, Dalhousie	2.0	Dalhousie and N. Sherbrooke	Lanark	15,476.63
411	Winchester via Melvin to County Rd. 8	7.5	Winchester	Stormont, Dundas and Glengarry	29,701.20
414	Concession IX X Road	4.5	Hungerford	Hastings	26,220.00
415	Snow Road-Omph Road, Palmerston	9.5	Palmerston N. and S. Canoto	Frontenac	43,685.15
416	Halloway By-pass, Thurlow	0.66	County	Hastings	27,191.10
419	Lakefield-Nephton Road	22.0	County	Peterborough	4,627.80
420	Denbigh-Radian Road	7.5	Denbigh, Abinger and Ashby	Lennox and Addington	22,598.68
421	Conhermere Hopefield Road	8.0	Radcliffe	Renfrew	11,585.31
422	Hallowell-Hillier Townline	11.11	County	Prince Edward	360.16 Cr.
423	Grand River Road	7.0	Richmond	Haldimand	163,340.78
424	Beechwood Road	7.0	County	Lennox and Addington	12,711.45
429	Warren St. Charles Road	6.5	Ratter and Dunnett	Sudbury	22,686.09
431	Concession III/IV Road to Flint	6.8	O'Connor	Thunder Bay	27,716.77
433	Highway 45 to Graecen's Corners	43.3	Alnwick	Northumberland and Durham	4,081.26
434	Anstruther Lake Road	5.0	Burleigh and Anstruthers	Peterborough	5,800.00
435	Boundary Road to Lot 18, Conc. XVI/XVIII.	3.0	Chisholm	Peterborough	7,991.28
436	Cashe Bay Caterette Road	4.0	Springer	Nipissing	23,369.79
438	Angus-Creemore Road	13.0	County	Simcoe	261,959.51
439	Genier and Boundary Road	2.0	Glackmeyer	Cochrane	2,550.10 Cr.
442	Wade's Landing Road	4.2	Nipissing	Parry Sound	14,685.26
444	Burnstown Road	4.75	McNab	Renfrew	78,213.09
445	Concession III/IV Road	5.8	Pittsburgh, Leeds and Landsdowne P.	Frontenac, Leeds and Grenville	22,079.76
446	Glen Huron-Dunedin Road	4.5	Nottawasaga	Simcoe	113,414.49
447	Barton Road	1.9	Orillia	Simcoe	34,308.46
448	Entford Mitchell's Corners Road	5.0	Darlington	Northumberland and Durham	11,517.56

449	County Road 24, Kempville Easterly.....	4.25	County	Leeds and Grenville	36,403.47
450	Lilly's Corners-Lynch Road.....	4.8	County	Leeds and Grenville	52,202.84
451	Highway 31 to Crysler Road.....	15.0	County	Stormont, Dundas and Glengarry.....	148,212.69
452	Vanleek Hill, Westerly.....	2.25	County	Prescott and Russell	24,326.92
453	Sylvanham Off-Lake Road.....	3.5	Loughborough	Frontenac	22,773.92
454	Sideroad 20/21.....	2.5	Ninto	Wellington	10,506.77
455	Highway Loop.....	6.0	Hinslop	Cochrane	1,996.37
456	Kushor Lake Road.....	6.5	Stanhope	Haliburton	37,077.94
457	Capeville Falls Road.....	2.25	Fitzroy	Carleton	76,558.07
458	Bridge Road in Rawdon.....	4.6	Rama and Morrison	Ontario and Muskoka	28,073.39
459	Courtland-Port Cowan Road.....	5.0	County	Hastings	54,466.69
460	Lawsonville, N. XIII Road.....	19.5	County	Norfolk	450,426.94
461	Black Creek-Baptiste Road.....	3.25	South Himswoorth	Perry Sound	35,644.80
462	Brackening Road.....	3.5	Monteale and Herschel	Hastings	46,717.28
463	Highway 3/4 to Marter Boundary	6.0	Watt	Muskoka	37,340.47
464	Elton Road, Parley, Walkerton.....	3.8	Playfair	Temiskaming	15,913.28
465	Alvinston-Courtright Road.....	14.1	County	Cochrane	498.75
466	Hanover-Neustadt Clifford Road.....	11.5	County	Bruce	315,306.43
467	Balsam Lake Road.....	11.5	County	Lambton	72,234.01
468	Hammell-Foresty Road.....	3.0	County	Grey	376,254.81
469	Main Street, Verrier P.V.....	2.0	Regina	Perry Sound	15,326.09
470	Swamp Road, Division.....	0.66	Caldwell	Kenora	2,189.56
471	County Road No. 85 (part), Maryborough	1.15	County	Nipissing	14,616.24
472	Bay Road.....	12.5	County	Northumberland and Durham	10,081.49
473	Crow Lake Road.....	5.15	South Emsley	Wellington	118,522.97
474	Pictou-Black River Road.....	4.0	Oso	Feeds and Grenville	8,000.00
475	Goodfish Road.....	5.5	County	Frontenac	24,984.02
476	Rose Corners St. Isidore Road N.....	6.0	Teck	Cochrane	81,596.97
477	Third Line, East.....	7.7	County	Prince Edward	6,900.95
478	Relessey Road.....	2.5	Caledon	Cochrane	25,181.91
479	McDonnell Road 1.....	8.0	Mono	Peel	23,860.97
480	Black Donald Matawatchian Road.....	9.0	McDonnell	Peel	134,104.23
481	Boundary Road.....	3.8	Brougham	Peel	29,163.63
482	Flesherton-Singhampton Road.....	1.3	Fitzroy and Torbolton	Reinow	100,441.93
483	Old Indian Line (part).....	15.8	Darlington and East Whitby	Carleton	12,275.56
484	Birch's Road.....	1.5	County	Northumberland, Durham & Ontario	1,393.05
485	Purdy-Centreview-Bell Rapids Rd. (part)	1.75	West Ferris	Grey	75,874.59
486	Morganston-Cuff's Corners Road.....	3.75	Bangor, Wicklow, McClure	Haldimand	4,640.04
487	Kenshal-Garden Hill Road.....	11.0	County	Nipissing	64,167.63
488	Bonnechere River Road.....	7.25	County	Hastings	24,483.89
489	Dunlop-Blyth.....	3.0	North Alcona	Northumberland and Durham	52,956.10
490	Homesheer Lake Road.....	14.5	County	Northumberland and Durham	17,780.87
491	Sideroad 6/7.....	6.5	Anson, Hindon and Minden	Renfrew	108,650.14
492	Highway 7 to Clandeboye.....	3.8	Mountroy	Haliburton	31,451.73
493	Merrywood Road (County Road 18)	4.0	County	Cochrane	29,656.01
494	Sideroad 2/3 (part).....	3.75	County	Midlesex	166,693.39
495	Katchewan Lake Road.....	2.0	Comtee	Lanark	5,762.97
496	Herbert's Corners-Gloicester Boundary	6.0	Smith	Thunder Bay	3,577.99
497	North Road in Carr.....	3.8	Ossou le	Peterborough	2,584.10
498	Bucke-Firstbrooke Boundary Road.....	5.3	County	Carleton	21,994.61
499	Chamberlain-Pacaud Boundary Road.....	4.0	Bucke	Cochrane	14,989.90
500	Chammins Road.....	1.6	Chamberlain	Temiskaming	9,908.25
501	Stanton Road.....	2.3	McGarry Improvement District	Temiskaming	34,095.79
502	Kiosk Road.....	3.9	County	Lennox and Addington	25,500.00
503	Adolphus Reach Road (part).....	7.0	Calvin	Nipissing	36,107.91
504		1.2	Adolphustown	Lennox and Addington	5,952.20

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1958 (Continued)
(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1958-59
515	Brunner Road in Dorion.....	2.75	Dorion Improvement District.....	Thunder Bay.....	14,250.14
517	Pigeon Lake Road.....	14.5	County.....	Victoria.....	2,300.43
518	Baines Road, Copper Road.....	4.5	Manitoulin.....	Hastings.....	9,606.90
519	Fourth Line Road, Conc. III IV.....	5.7	Albion.....	Peel.....	17,371.53
520	Boyd's Road in Clerque.....	3.0	Calvert.....	Cochrane.....	9,651.54
521	Fifteenth Sideroad.....	9.5	Flores.....	Simcoe.....	23,680.00
522	Sunnyside Road.....	1.15	Tay.....	Simcoe.....	11,514.11
524	McGrath Road to Clontarf.....	8.0	Gratton, Sebastopol.....	Renfrew.....	26,364.27
525	Prescott Suburban Road.....	1.4	County.....	Leeds and Grenville.....	9,362.95
526	North Gower, Westely (Co. Rd. No. 26)	11.5	County.....	Carleton.....	53,414.77
527	Elmira By-pass.....	3.0	Wellesley, Woodwich.....	Waterloo.....	7,176.06
528	Sulphide to Tweed Road.....	5.3	County.....	Hastings.....	3,180.31
529	Halville-Reid's Mill Road.....	3.5	Mountsain.....	Stormont, Dundas and Glengarry.....	8,919.16
531	Heart Lake Road.....	4.5	Chinguacousy.....	Peel.....	3,705.72
	Preliminary Surveys.....				1,321.64
	TOTALS.....	1014.54			\$6,927,148.02

APPENDIX No. 15 ROAD MILEAGES IN ONTARIO, DECEMBER 1958

	TOTAL MILES	TYPE OF PAVEMENT				
		CONCRETE	BITUMINOUS	MULCH	GRAVEL AND CRUSHED STONE	EARTH
King's Highways.....	8,943.82	424.03	5,846.13	1,370.51	1,303.15	
Secondary Highways.....	2,475.80		30.00	378.50	2,067.30	
Total King's Highways.....	11,419.62	424.03	5,876.13	1,749.01	3,370.45	
County Roads.....	9,349.45	136.16	1,374.92	2,557.82	5,275.43	5.12
Organized Townships.....	51,177.68	62.56	1,055.39	1,066.47	40,743.49	8,249.77
Unorganized Townships.....	4,691.82			3.00	3,520.66	1,168.16
Total Municipal Rural Roads.....	65,218.95	198.72	2,430.31	3,627.29	49,539.58	9,423.05
Total All Rural Highways and Roads.....	76,638.57	622.75	8,306.44	5,376.30	52,910.03	9,423.05
Metropolitan Roads.....	291.11	10.77	234.50	12.25	28.50	5.09
City, Town and Village Streets.....	8,163.12	503.37	2,469.74	1,252.49	3,517.53	419.99
Total Urban Streets.....	8,454.23	514.14	2,704.24	1,264.74	3,546.03	425.08
Total All Rural Roads and Urban Streets..... 1958.	85,092.80	1,136.89	11,010.68	6,641.04	56,456.06	9,848.13
"..... 1957.....	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02
"..... 1956.....	83,508.24	1,337.88	9,188.76	5,750.73	56,797.11	10,433.76
"..... 1955.....	82,270.59	1,428.88	8,126.72	5,858.38	55,991.30	10,865.31
"..... 1954.....	81,627.96	1,604.64	7,346.45	5,532.49	56,034.91	11,109.47
"..... 1952.....	81,780.89	2,029.15	6,605.52	4,545.60	56,039.64	12,060.98

CHRONOLOGY—DEPARTMENT OF HIGHWAYS**1958**

- March 16 — Department estimates for 1959-60 presented to the Legislature with the report "Ontario's Roads and Streets" by Hon. Fred M. Cass, Q.C.
- April 8 — London Region officially decentralized with respect to Property Section.
- May 26 — Toll Bridge Act became effective as passed in 1958 session of the Legislature.
- June 9 — Windsor-Tilbury section of Highway 401 officially opened with the completion of the Windsor entrance. (31 miles)
- June 23 — Hon. James N. Allan, Minister of Public Works, announced construction had started on a new Administration Building for the Department of Highways just north of Highway 401 and east of existing Department of Highways buildings.
- July 30 — Announcement of a special highway program of major projects made by Prime Minister Leslie M. Frost, Q.C.
- August — Hornpayne Access Road completed from Highway 11 to Hornpayne and opened to traffic as Secondary Highway 631.
- August 25 — Chatham By-pass section of Highway 2 officially opened by W. J. Fulton, Deputy Minister of Highways.
- September 23 — Bridge over Mattagami River, at Smooth Rock Falls, officially opened by Hon. Fred M. Cass, Q.C., Minister of Highways.
- October 10 — Lindsay By-pass opened to traffic.
- October 30 — Burlington Bay Skyway officially opened by the Hon. Leslie M. Frost, Q.C.
- November 3 — Highway 401 officially opened between Highway 27 and Highway 10 by Col. T. L. Kennedy, M.P.P.
- November 10 — First tolls collected on the Burlington Bay Skyway.
- November 25 — Highway 401 officially opened between Highway 30 and Highway 33 (Brighton to Trenton).

1958

December 18 — Clearing started for the Foleyet to Chapleau Resources Road.

December — Innisville By-pass and new bridge over the Mississippi River opened to traffic.

Queen Elizabeth Way widened to six lanes between Humber River and Highway 27.

Paving completed on Highway 103 from Waubauskene to Foote's Bay (except for the Port Severn By-pass).

Highway 401 opened for traffic from Highway 15 to the Joyceville side road 5.59 miles.

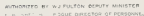
Paving of Highway 11 between Hearst and Longlac was completed with laying of 83 miles of top course by the D.H.O. Asphalt plant.

Highway 101 completed to Quebec border from 39 miles east of Matheson (a distance of 7.2 miles).

Highway 401 officially opened from Highway 33 (Trenton) east 23.2 miles to Drummy's Side Road.

Little Pic River Bridge on Highway 17 Trans-Canada completed and opened to traffic.

W. F. F. LTD.





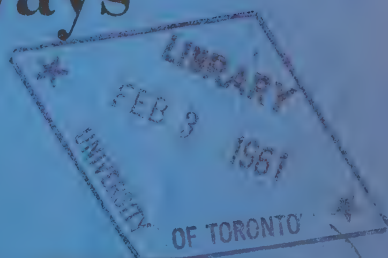
ONTARIO

Annual Report

OF THE

Department of Highways

ONTARIO



FOR THE FISCAL YEAR ENDING MARCH 31st

1960

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO

1960

TO THE HONOURABLE JOHN KEILLER MACKAY,
D.S.O., V.D., LL.D.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1960.

Respectfully submitted,

FREDERICK M. CASS,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 20, 1960.

TO THE HONOURABLE FREDERICK M. CASS, Q.C.,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1960.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

W. J. FULTON,
Deputy Minister.

Department of Highways, Ontario,
December 15, 1960.

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This new "Tree-Saver" machine purchased by the Ontario Department of Highways in 1959 is designed to transplant trees up to 30 feet in height.

SUMMARY REPORT OF DEPARTMENT OPERATIONS

by W. J. FULTON, P.Eng., Deputy Minister of Highways

In a year in which Ontario's entire highway construction program has been studied and reviewed exhaustively so that we could get the utmost out of our highway dollar, we have been able to continue work on all of our major projects, initiate new construction, sustain a high standard of maintenance throughout the entire provincial highway system and provide some increase in financial aid for municipal roads and streets.

In the past year we have completed urban transportation studies in London, Sarnia, Guelph and Fort William. Additional studies are under way or about to begin in 10 other cities, which have a combined population of almost two and a half million.

Encouraged by the success of the County Engineer's Advisory Committee, we have now also sponsored a City Engineers' Advisory Committee along the same lines as the county engineers' group. We have every reason to believe that their experience and skill, along with their desire to make a contribution to the improvement of roads and streets programs in their communities, will bear fruit in the very near future.

In order to improve our service to the municipalities, we have integrated our Municipal Roads Branch with the Operations Branch so that our district municipal engineers are now able to offer technical assistance which was not previously available.

Maintenance remains a major item. High standards of maintenance add to the efficiency and safety of our highways, apart from the fact that proper maintenance can extend the useful life of a highway. In addition, landscaping, maintenance of 1,200 picnic tables and constant supervision to keep our rights-of-way clean, provide greater pleasure and convenience for the travelling public.

During the fiscal year ending March 31, 1960, 90,000 trees were planted along Ontario's highways. During the last 10 years, 1,600,000 trees have been planted. Through the use of a newly acquired tree-saving machine, it has been possible to move and transplant successfully more than 1,200 trees, some more than 30 feet in height. Had these trees not been moved, they would have been destroyed through new road construction.

The Queen Elizabeth Way is being widened over its entire length, from four to six lanes, as are all bridges along the route.

Highway 400 has been extended from Barrie to Coldwater and will eventually extend into Muskoka.

Highway 401 will be completed in 1963, several years ahead of schedule and will then establish a 510-mile stretch of uninterrupted safe travel from Windsor to the Quebec boundary.

Two additional expressways are under construction — The Chedoke Expressway, which will carry traffic through the city of Hamilton from the Queen Elizabeth Way, and the Queensway at Ottawa. The latter is part of the Trans-Canada Highway.

When Metropolitan Toronto completes the Don Mills Parkway as far as Highway 401, the Highway's Department has planned a new dual-lane highway — 404 — which will run northerly to the areas east of Lake Simcoe.

Highway projects which will total \$15,000,000 over a five-year period are under way as part of the Roads-to-Resources program aimed at making accessible Ontario's as yet untouched natural wealth.

Last winter we began work on a Skyway which will take the Queen Elizabeth Way over the Welland Canal near St. Catharines and thereby eliminate one of the most annoying traffic bottlenecks in southern Ontario.

Early this year we moved our head office personnel into our new office building at Downsview. For the first time in many years all our head office operations are located together and it is needless to state how much this has contributed to increased efficiency.

As of March 31, 1960 our highway system included 9,167 miles of King's Highway and 2,547 miles of Secondary Highways — a total of 11,714 miles.

Total net expenditure by the Department was \$248,514,195 in the fiscal year ended March 31, 1960, as compared with \$227,547,235 in the previous year. Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	FISCAL YEARS ENDING	
	MARCH 31, 1960	MARCH 31, 1959
Gross Capital Payments on Construction of King's Highways and Secondary Highways.....	\$149,465,398	\$137,742,503
Less: Recoveries on (1) Trans-Canada Highway, (2) St. Lawrence Seaway, (3) Ottawa Queensway, (4) Railway Bridges.....	20,107,090	18,024,561
Net Capital Payments on Construction of King's Highways and Secondary Highways.....	\$129,358,308	\$119,717,942
Ordinary Expenditure on King's Highways and Secondary Highways including Maintenance and General Operating Expense.....	47,848,608	45,789,804
Provincial Subsidies on Municipal Roads and Streets and cost of Development Roads and Roads in Unincorporated Townships.....	71,307,279	62,039,489
TOTAL NET EXPENDITURE.....	\$248,514,195	\$227,547,235

Contracts Completed

During 1959-60 capital contracts were completed on 650.55 miles of grading; 479.38 miles of hot mix paving; 117.7 miles of resurfacing; 34 steel structures; 114 general structures. Completed capital contracts totalled 289, ordinary contracts 189 and miscellaneous 194.

Some 238 capital contracts and 153 ordinary (maintenance) contracts were called in 1959-60. New capital work included 533 of grading and granular base, 546 miles of hot mix paving and 74 structures of various types. Ordinary contracts covered 17 hot mix patching contracts, 365 miles of surface treatment and 22 for winter sanding.

Index

The index of tender prices paid on road contracts rose during the year indicating somewhat higher average unit prices. The index was 129.1 for 1959-60 as compared with 124.2 in 1958-59 and the nine-year high of 156.8 in 1956-57. The index of prices for road materials purchased by the Department showed a decline from 122.1 in 1958-59 to 116.8 in 1959-60.

In the fiscal year a total of 203 miles of new sections of King's Highways were completed for traffic of which 46.4 miles were four-lane. Some 116 structures were completed. This compares with 214.6 miles of new highway and 103 structures in 1958-59.

Information Section

G. A. Wells, Information Officer

The Information Section is responsible for the collection and issuance of general information regarding Department activities; and for supervision of the photographic subsection, road information service, and a limited clipping service.

During the year information and pictures were supplied on request to a large number of newspapers, magazines, radio and television stations in addition to personnel in the Department and other Departments of Government. Press releases were made as required on a "straight news" basis and included fact sheets and maps on major road openings.

Two of the department's general release films were completed, "Skyway to the Future" the story of Burlington Bay Skyway, and "White Fallout" winter maintenance operation. The film "White Fallout" was immediately made available to all Ontario Television stations and the United States stations along the southern border of the Province.

Television spots of 60-40-20 seconds were also made available to the same Television stations to assist in their safe driving campaigns during the winter months.

The staff photographers during the year took 4,042 pictures, and made 13,170 copy prints.

A road information service was maintained to answer telephone inquiries regarding road conditions and this service was extended to 24-hours-a-day, seven-days-a-week basis between November 2, 1959 and March 24, 1960 to provide round-the-clock service on winter road conditions. A total of 45,569 calls were serviced during the year.

Individual written requests for road information resulted in the mailing of 18,500 road maps and 9,006 road bulletins.

The official Ontario Road Bulletin was issued on a semi-monthly basis from May 1 to December 1, 1959 with an average distribution of 17,700 copies of each issue and a peak distribution of 25,858 copies for the August 15 issue. Distribution was made on request and the Bulletin was in demand from individual motorists, automobile associations and tourist information centres throughout Ontario and in the United States.

As part of the syllabus of all the Department's in-work training classes, the Information Officer gave half-hour lectures on Public Relations — the definition and theory, operations of the Information Section, and suggestions for the participation of every employee in furthering good public relations. Several addresses on highway progress in Ontario were given to groups in the Province.

Extensive research was also done and assistance given to magazine and newspaper writers as well as to primary and high school pupils in composing articles and essays.

The D.H.O. *News*, a magazine published for the information of employees of the Department by the Information Section, reported many of the major highway construction projects completed and continued to tell the story of the part played by the many sections within the Department in ten issues during the fiscal year. The magazine, with an average run of 13,500 copies per issue, is mailed directly to the homes of the great majority of employees and is made freely available to all others through bulk shipments to the District and Regional offices, as well as to Head Office branches.

The D.H.O. *News* is also mailed to every newspaper, radio and TV station in Ontario, as well as to trade magazines and associations interested in highway construction. As a result, many feature stories that were prompted by an article first seen in the D.H.O. *News* appeared throughout the year in daily and weekly newspapers and many of the trade magazines.

Electronic Section

A. E. Goodwin, Superintendent

The Electronic Section, under A. T. C. McNab, Chief of Administration, has continued to develop along the lines set down in a report prepared by J. Diebold and Associates, a firm of Personnel Management Consultants on Data Processing Methods. This report entitled "Department of Highways Ontario Survey of Computer Requirements" was completed in October 1958. On the strength of the recommendations contained therein a new computer, with magnetic tapes, 4,000 words of memory and fast input and output devices was placed on order with International Business Machines. This new equipment will permit the extension of activities into such areas as high speed cost accounting, payroll calculations, integrated area and volume calculations, advanced traffic assignment and distribution and many administration problems which require the handling of masses of detail which has to be assimilated for proper analysis. Other advantages will accrue from the new equipment as well as those mentioned, for the existing programs can be extended to provide more rapid service to those requesting assistance through data processing.

The Electronic Section moved to the new Administration Building early in 1960 and the new quarters, planned with an eye to the future have proved to be of great value and should be adequate, with some modifications, for some time to come.

The Tabulating Section of the Financial Comptroller's Branch has been united with the Electronic Section. This combination provides a powerful force of programmers, analysts, mathematicians and other skilled persons capable of handling with speed and dispatch the many problems which are readily solved by the data processing technique.

Constant study planning and cooperation with all branches on the solution of problems has begun to pay off in the form of a powerful work medium which, as time goes on, should provide the means of obtaining engineering, accounting and administration answers and placing them when needed in the hands of the persons requiring them for the many decisions and answers constantly needed in the operation of the complex organization — The Ontario Department of Highways.

LEGAL BRANCH

Director, A. R. DICK

Legislation

Significant amendments were made to The Highway Improvement Act, 1957, at the First Session of the Twenty-sixth Legislative sitting in 1960. Legislative authority was given for the designation of tertiary roads, resource roads and industrial roads. Under the legislation, the Department will be responsible for the summer maintenance of any tertiary roads but no winter maintenance may be carried out unless some authority or person undertakes to pay at least fifty per cent (50%) of the cost thereof. Resource roads will be a special type of tertiary road where certain provisions of The Highway Traffic Act relating to such matters as load limits shall not apply. Industrial roads will be private roads that are made available for use by the public with some contribution being available from the Department to compensate the owner of the private road for such public use.

A further amendment authorized contributions by the Department for the preparation of highway needs study reports in urban municipalities. Authority was given for the making of regulations which would facilitate the movement of heavy vehicles across the King's Highway at intersections with private roads in the northern areas of the Province. The connecting link provisions of The Highway Improvement Act, 1957, were enlarged to provide for county roads that might be located in urban municipalities. There were other amendments which were procedural in nature and of less general interest.

Solicitors

In the course of the last two years regional solicitors have been established in the regional offices of the Department at Kingston, London, North Bay, and Toronto. These solicitors are in a position to advise the personnel of the regional offices respecting the legal aspects of the work which is carried on through these offices.

Three solicitors are located in the main office of the Department at Toronto to provide legal advice to the various branches of the Department. These solicitors also provide assistance and advice to the regional solicitors where necessary.

Signs and Building Permits Section

This Section administers the policy and regulations regarding the erection of buildings, gasoline pumps, signs and other structures along the provincial highways and also with respect to entrances to controlled-access highways. It maintains general supervision over permits issued by the districts and gives assistance upon request to the Operations Branch personnel.

PERMITS ISSUED AND REVENUE

TYPE	HIGHWAY CLASS	NO. OF PERMITS	REVENUE
Building	Controlled-access — approximate value of construction approved — \$22,433,850.....	407	N/A
	Other than controlled-access — approximate value of construction approved — \$55,907,575.....	4,387	N/A
Gasoline			
Pumps	All highways.....	3,911	\$41,488.00
Sign	Other than controlled-access.....	4,676	\$32,009.50
Entrance	All highways.....	146	N/A
Encroachment	All highways.....	1,259	.....

Insurance and Claims Section

This Section is responsible for the insurance policies carried by the Department and for some motor vehicle liability policies carried by other Departments of the Government. The Section investigates and supervises the settlement of claims made against the Department under The Highway Improvement Act, 1957, and claims made by the Department under The Workmen's Compensation Act. There are other miscellaneous types of tortious claims which are also dealt with by this Section.

VOLUME OF CLAIMS AND INVESTIGATION

Claims against Department	
— non-repair of highway.....	335
Claims against Department	
— miscellaneous liability.....	200
Claims by Department	
— for damage to Department property.....	2,367
Claims by Department	
— for personal injuries to employees.....	42
Investigations of accidents	
— involving government vehicles.....	921



Bayview Extension, looking north from C.N.R., Toronto District.

REPORT OF THE FINANCIAL COMPTROLLER**COMPTROLLER, J. G. McMILLEN, C.A.**

The following statements outline the expenditures, contract commitments and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1960:

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Summary of Contract Commitment Status
- IV. Trans-Canada Highway
- V. The "Queensway" — Ottawa
- VI. Receipts
- VII. Comparison of Average Unit Prices paid on Contracts
- VIII. Burlington Bay Skyway

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$248,514,195, excluding transfer of funds to the "Highway Construction Account." The following is a comparison of total expenditures with previous years:

Year ending March 31:

1955.....	\$113,445,647	1958.....	\$212,764,943
1956.....	158,859,908	1959.....	227,547,235
1957.....	200,850,551	1960.....	248,514,195

Highway Construction Account

It will be noted that Ordinary Expenditure (Statement I) sets out a transfer to "Highway Construction Account" of \$15,000,000. This account is for the purpose of providing Ordinary Account funds for road construction purposes, thus reducing Capital funds otherwise required.

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement IV in the amount of.....	\$150,216,453
with funds recovered or recoverable of.....	79,535,310
and a net cost to the Department of.....	\$70,681,143

Recoverable Expenditures

It is interesting to note that funds recovered as a result of Departmental expenditures have reached an all time high of \$24,566,783 made up as follows:

Trans-Canada Highway Agreement.....	\$17,662,422
Other Federal Government	
Departments and Boards.....	2,237,869
Other Ontario Government	
Departments and Commissions.....	1,666,131
Municipalities	562,000
Sundry.....	2,438,361

\$24,566,783

It is also interesting to note the relationship of such recoverable expenditures to the Department's total expenditures on the Construction and Maintenance of King's Highways. The relationship is the recovery of \$1.00 for every \$8.00 expended for such purposes.

Pre-qualification of Contractors

Subsequent to November 1959 the pre-qualification procedures were applied to contracts where the tendered amounts were expected to be in excess of the following:

Grading contracts.....	\$100,000
Paving contracts.....	75,000
Grading and paving contracts.....	150,000
Structure contracts (excluding those for the supply, erection and painting of structural steel).....	50,000

Prior to November 1959 the procedures were applied only to contracts where the tendered amounts were expected to be double the amounts shown above. Eighty-two capital contracts requiring qualification were awarded during the year, with an average of 8 bids received on each contract. This compares with an average of 6 bids per contract for all other capital contracts awarded during the year.

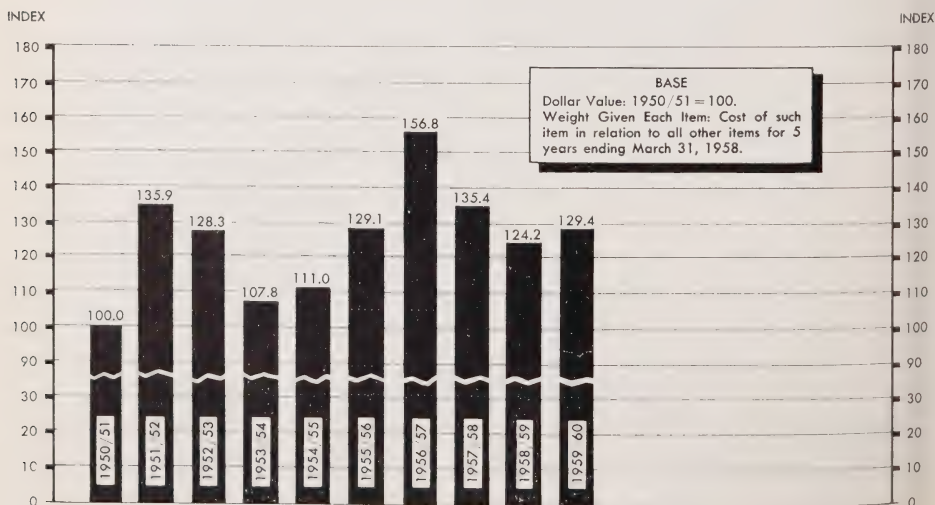
Indices of Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following indices are submitted:

- Index of Tender Prices paid on Road Contracts
- Tender and Material Price Indices

It is evident from the accompanying indices that:

- Unit prices on contracts awarded have increased during the year, while prices paid for road materials have decreased.
- In the 10-year period covered by the indices, the upward trend is shown for both contract and material prices.



STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1960 and March 31, 1959

	YEAR ENDING MARCH 31, 1960	YEAR ENDING MARCH 31, 1959
Maintenance of King's Highways and Secondary Roads —		
Winter Maintenance —		
Contract and day labour.....	\$15,487,969	
Equipment operating costs due to standby (60%).....	37,207	
Summer Maintenance —		
Patrol costs.....	9,968,156	
Gravel crushing — contract and day labour.....	1,331,374	
Prime — contract and day labour.....	999,290	
Hot mix patching — contract.....	1,019,732	
Surface treatment — contract and day labour.....	611,120	
Mulch — day labour.....	132,618	
Major bridge repairs.....	201,114	
Salt shed construction.....	100,371	
Equipment operating costs due to standby (40%).....	24,804	
Unallocated portion of electrical, zone painting and forestry op- erations.....	96,195	
Operation of ferries.....	241,721	
Flood and other emergencies.....	22,424	
Overheads — office, engineering, warehouse, and municipal.....	5,779,367	
Net cost of equipment rented to municipalities.....	69,527	
Expenditures recovered, but cred- ited to revenue.....	156,991	
Decrease in inventories.....	(80,054)	
	<hr/>	
Reparing of present roads	\$36,199,926	\$34,243,855
Maintenance of development roads	1,593,791	2,119,277
Maintenance of roads in unincorporated townships in Northern Ontario	206,084	176,794
	<hr/>	<hr/>
	643,039	729,504
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.).....	<hr/>	<hr/>
	\$38,642,840	\$37,269,430
General Operating Expenditures —		
Purchase of new trucks, tractors, graders, sanders, plows and other road equipment.....	\$ 2,682,180	\$ 2,958,416
Printing and stationery.....	958,824	754,312
Office furniture and equipment	384,055	377,618
Workmen's Compensation and In- surance	390,888	380,638
Unemployment insurance stamps.....	249,016	197,427
Maintenance of buildings, and area office rentals.....	370,601	270,213
Bus rentals	82,388	60,359
Teletype rentals.....	55,165	63,961
Staff training.....	143,524	165,920
Recoverable expenditures.....	(35,716)	83,723
Central Stores — increase in stock.....	34,586	27,782
	<hr/>	<hr/>
	\$ 5,315,511	\$ 5,340,369

STATEMENT I (Cont'd)

Head Office —				
General Administrative and Operating staff.....	\$ 3,563,302		\$ 3,197,267	
Travelling expenses.....	345,030		304,521	
Sundry.....	487,172		376,619	
		4,395,504		3,878,407
Roads publicity, maps, etc.....		184,412		143,291
Burlington Bay Skyway — toll collection costs.....		159,464		64,605
Municipal Subsidies —				
County roads.....	\$ 4,936,346		\$ 4,676,753	
Township roads.....	11,489,112		9,877,873	
Cities, towns and villages.....	8,070,573	24,496,031	6,975,515	21,530,141
TOTAL ORDINARY EXPENDITURES.....		<u>\$73,193,762</u>		<u>\$68,226,243</u>

PER PUBLIC ACCOUNTS

Total Ordinary expenditures, as above.....	\$73,193,762	\$ 68,226,243
Transfer of funds to Highway Construction Account.....	15,000,000	45,000,000
TOTAL ORDINARY EXPENDITURES PER PUBLIC ACCOUNTS	<u>\$88,193,762</u>	<u>\$113,226,243</u>

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1960 and March 31, 1959

	YEAR ENDING MARCH 31, 1960	YEAR ENDING MARCH 31, 1959
Construction of King's Highways and Secondary Roads —		
Payments to contractors.....	\$ 79,110,499	\$ 74,669,221
Materials and sundry contract expenditures.....	33,284,432	29,238,216
Engineering.....	10,739,315	8,766,448
	\$123,134,246	\$112,673,885
Construction of development roads.....	7,674,741	6,750,354
Construction of roads in unincorporated townships in Northern Ontario.....	421,206	357,921
	<u>\$131,230,193</u>	<u>\$119,782,160</u>
Expenditures allocated to the above roads —		
Property purchases.....	\$ 9,350,376	\$ 11,612,070
Land surveys.....	2,574,538	2,130,468
Planning and design.....	3,780,681	3,742,563
	<u>15,705,595</u>	<u>17,485,101</u>
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.).....	\$146,935,788	\$137,267,261

STATEMENT II (Cont'd)

Expenditures of Head Office Branches
unallocated and not included
above —

Property purchases.....	\$ 1,283,028	\$ 1,497,440
Land surveys.....	1,344,068	1,267,787
Planning and design.....	2,341,845	1,876,429
Construction of new buildings.....	488,907	479,505
Soils testing and research.....	1,988,619	1,684,101
Engineering audit.....	611,444	563,802
Supply (Bailey bridge parts and steel).....	396,824	32,365
Recoverable expenditures — Net	1,922,934	92,215
Sundry expenditures including electronics section.....	247,888	89,873
	<u>\$ 10,625,557</u>	<u>\$ 7,583,517</u>

Municipal Subsidies —

County roads.....	\$ 12,158,175	\$ 9,927,143
Township roads.....	11,887,615	9,989,668
Cities, towns and villages.....	13,820,388	12,577,964
	<u>37,866,178</u>	<u>32,494,775</u>

TOTAL GROSS CAPITAL PAYMENTS ON
CONSTRUCTION

\$195,427,523	\$177,345,553
---------------	---------------

Less Recoveries —

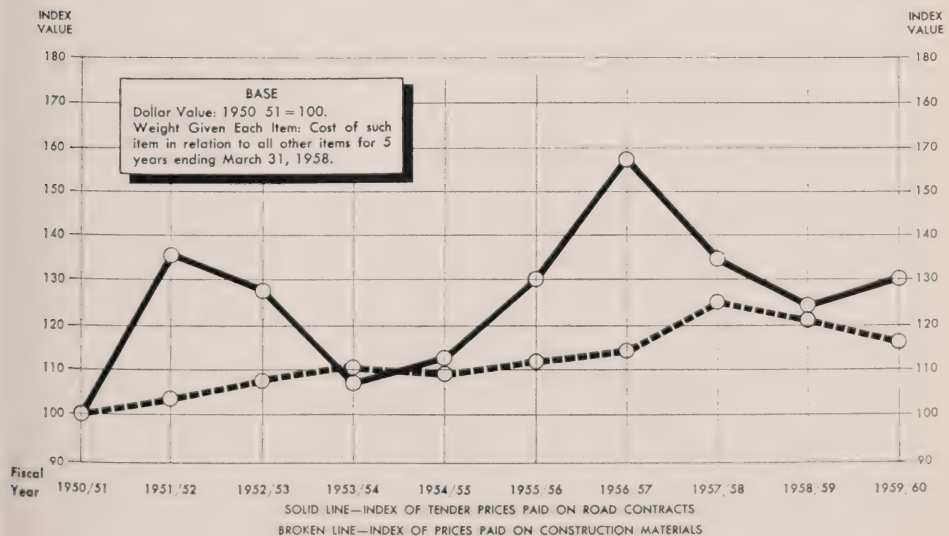
Trans-Canada Highway.....	\$ 17,662,422	\$ 15,803,757
St. Lawrence Seaway.....	206,798	1,419,520
Ottawa Queensway.....	773,681	109,221
Railway bridges.....	1,464,189	692,063
	<u>20,107,090</u>	<u>18,024,561</u>

NET CAPITAL PAYMENTS PER PUBLIC
ACCOUNTS.....

\$175,320,433	\$159,320,992
---------------	---------------

EXPENDITURE SUMMARY

Ordinary expenditure.....	\$ 73,193,762	\$ 68,226,243
Capital payments — Net.....	175,320,433	159,320,992
	<u>\$248,514,195</u>	<u>\$227,547,235</u>
Transfer to Highway Construction Account....	15,000,000	45,000,000
	<u>\$263,514,195</u>	<u>\$272,547,235</u>



STATEMENT III

SUMMARY OF CONTRACT COMMITMENT STATUS AS AT MARCH 31, 1960

TENDER VALUE ONLY

	CONTRACTS AND PROJECTS		
	CONSTRUCTION	MAINTENANCE	TOTAL
Outstanding Commitments at April 1, 1959....	\$ 52,346,653	\$ 751,636	\$ 53,098,289
Contracts let in year ending March 31, 1960.....	69,455,225	4,997,973	74,453,198
Adjustments between actual and estimated quantities and supplementary additions to contracts.....	6,098,159	325,137	6,423,296
	\$127,900,037	\$6,074,746	\$133,974,783
Deduct:			
Payments and Sundry Adjustments.....	81,251,874	5,576,188	86,828,062
Outstanding Commitments at March 31, 1960.	\$ 46,648,163	\$ 498,558	\$ 47,146,721

STATEMENT IV

TRANS-CANADA HIGHWAY

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway since the signing of the Agreement with the Federal Government on April 24, 1950, and the Supplementary Agreement signed July 27, 1956.

	REFUNDABLE BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Refunded by Federal Government on account of work performed prior to April 24, 1950.....	\$ 1,569,640	
Year ending March 31, 1951.....	2,749,329	\$ 7,043,559
" " " 1952.....	3,453,866	8,242,801
" " " 1953.....	4,103,753	11,746,130
" " " 1954.....	2,486,860	9,686,452
" " " 1955.....	6,274,487	5,675,343
" " " 1956.....	3,365,959	9,602,299
" " " 1957.....	4,855,053	13,996,280
" " " 1958.....	12,381,361	20,683,306
" " " 1959.....	15,803,757	27,995,777
" " " 1960.....	17,662,423	28,530,628
Expenditure by Department for property and other non-recoverable expenditures.....		7,013,878
TOTALS TO MARCH 31, 1960.....	\$ 74,706,488	\$150,216,453
Further claims to be submitted based on expenditure to March 31, 1960 — Claim No. 82.....	\$ 2,259,821	
" No. 83.....	2,313,001	
" No. 84.....	256,000	
TOTAL REFUNDS BY FEDERAL GOVERNMENT.....		79,535,310
NET ESTIMATED COST TO MARCH 31, 1960.....		\$ 70,681,143

STATEMENT V

THE "QUEENSWAY" OTTAWA

The following statement sets out expenditure and amounts recoverable on the "Queensway" Ottawa since the signing of the Agreement with the Federal Government, the Federal District Commission and the City of Ottawa, on March 19, 1957.

EXPENDED BY DEPARTMENT:

Year ending March 31, 1958.....	\$ 563,956
" " " 1959.....	1,720,076
" " " 1960.....	3,860,475

\$6,144,507

RECOVERED FROM FEDERAL GOVERNMENT:

Year ending March 31, 1958.....	\$ 204,500
" " " 1959.....	109,221
" " " 1960.....	773,681

\$1,087,402

Further amount to be recovered based on expenditure to March 31, 1960.....

549,037

TOTAL RECOVERIES FROM FEDERAL GOVERNMENT..... \$1,636,439

Amount to be recovered from the City of Ottawa based on expenditure to March 31, 1960.....

1,167,431

Amount to be recovered from the Federal Government and the City of Ottawa but as yet unallocated....

268,384

TOTAL RECOVERIES..... \$3,072,254

NET ESTIMATED COST TO MARCH 31, 1960..... \$3,072,253

STATEMENT VI

STATEMENT OF RECEIPTS

For the Fiscal Years Ending March 31, 1959 and March 31, 1960

	YEARS ENDING	
	MARCH 31, 1960	MARCH 31, 1959
Sales of land and buildings.....	\$1,244,500	\$1,228,365
Property rentals.....	253,622	232,848
Sale of services and materials.....	380,781	298,526
Permits — sign and housemoving.....	52,661	47,300
Gas pump revenue.....	40,620	40,605
Gas line franchise.....	9,330	8,520
Burlington Bay Skyway (opened November 10, 1958).....	612,020	170,732
Miscellaneous.....	61,391	148,699
TOTAL RECEIPTS.....	\$2,654,925	\$2,175,595
Distribution —		
Ordinary revenue.....	\$1,386,634	\$ 849,927
Capital receipts.....	1,268,291	1,325,668
	\$2,654,925	\$2,175,595

STATEMENT VII
COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS
(items used for price index purposes)

For period April 1, 1950 to March 31, 1960

Piscal Year	Clearing Acre	Grubbing Acre	Earth Exca- vation Cu. Yd.	Rock Exca- vation Cu. Yd.	Gran- ular A- Ton	Gran- ular B- Ton	$\frac{3}{8}$ " Crushed Gravel A- Ton	$\frac{3}{8}$ " Crushed Gravel B- Ton	Bitu- minous Hot Top Course Ton	Bitu- minous Hot Mix Base Course Ton	Sand Cushion Ton	Earth Com- paction Cu. Yd.	Com- paction Equip- ment Hour	Water for Com- paction M. Gal.	Concrete in Struc- ture Cu. Yd.	Concrete Culverts Cu. Yd.	Struc- tural Steel Fabric- ation Ton	Struc- tural Steel Erec- tion Ton
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	.....	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	.....	4.56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	5.13	3.91	.79	.....	6.29	4.37	27.90	37.77	246.28	63.69

STATEMENT VIII
BURLINGTON BAY SKYWAY
STATEMENT OF TRAFFIC AND GROSS REVENUE
For the Year Ending March 31, 1960

	PASSENGER CARS	LIGHT TRUCKS	HEAVY TRUCKS AND BUSES	TOTAL
Toll Rates —				
Cash fare.....	15c.	25c.	45c.	
Tickets.....	20 for \$1.00	24 for \$4.00	20 for \$6.00	
Number of Vehicles.....	5,440,859	126,918	90,740	5,658,517
Percentage of Total Traffic.....	96.15%	2.24%	1.60%	100%
Toll Revenue (including unrepresented tickets).....	\$553,555	\$29,325	\$33,254	\$616,134
Less discount on American funds.....				4,114
Total Revenue per Statement VI.....				\$612,020
Average Toll Revenue per Vehicle.....	10.2¢	23.1¢	36.6¢	10.9¢



Arkell bridge over the Eramosa River, Stratford District.

SUMMARY REPORT OF THE CHIEF ENGINEER

by **W. A. CLARKE, P.Eng.,** *Chief Engineer*

During the year ending March 31, 1960 all phases of highway engineering from the planning to the construction and maintenance stage continued at a record rate. New techniques in all phases of highway engineering were introduced, tried and found to produce better results. Details of the many varied tasks performed are outlined in the reports of the branches, divisions and sections. There are several highlights, however, that merit special mention.

Continuous updating of the publication "Ontario's Roads and Streets" was carried out in order to keep abreast of constantly changing conditions. A form of study known as an Urban Traffic Study showed a marked and sudden increase in frequency and scope. Studies were completed at the Lakehead, London, Sarnia, Sudbury, and a start was made on others at Hamilton, Kitchener-Waterloo, Guelph and Barrie. These will enable planned and proper development to take place on the major arteries through these urban areas. Another form of study known as a Regional Highway Transportation Study was inaugurated. It deals with highway needs in much more detail than did the publication "Ontario's Roads and Streets".

A new committee was formed to deal with the approval of sign standards and sign policy. Its membership comprises of representatives from Planning, Operations, Signs and Building Permits and the Departments of Transport and Travel and Publicity. During this fiscal year 24 origin-destination surveys were carried out and analyzed. One such survey was on Highway 401 from Highway 27 to Highway 2, which was the largest one-day survey ever carried out in Canada. This was done to provide essential traffic data for the determination of future plans for the rehabilitation of this very heavily used artery through Metropolitan Toronto.

During this fiscal year a new group known as the Location Project Subsection was formed to prepare functional design plans of major projects. It has prepared 37 projects in all, which include the Skyway at Homer on the Queen Elizabeth Way, the Chedoke Expressway, the Toronto By-pass, Don Valley Parkway Extension and the approaches to the new Lewiston Bridge near Niagara Falls.

Highway Location Survey Work was completed on 1,263 miles including major bush projects for resources and access roads. In addition, new study plans were prepared from aerial photographs covering almost 5,000 square miles.

Aided by modern techniques, such as the electronic computer, 623 miles of grading and 632 miles of paving projects were pre-engineered, computed and checked. An important step was taken in the publication of the "Estimating Manual". This Manual has improved the calibre of work produced and has been invaluable as an aid to standardization of all types of road design throughout the Province.

In a like manner to the road design operations, the 141 structure designs completed were aided by extensive soil and hydrology studies and the continued retention of consulting firms conversant with new design techniques.

The year saw a record expenditure on capital construction projects with the completion of several vitally important highway links and the beginning of many other contracts of equal importance throughout the Province. Much emphasis on

the "Gap" Section; four-lane controlled-access Highway 401, the Queen Elizabeth Way and the Ottawa Queensway.

In keeping with the expanded construction program, the maintenance operations were geared to provide a high standard of service for the newly constructed highways. The varied program carried out by the Maintenance Section involved pavement patching, shoulder repairs and maintenance, grass cutting, weed spraying, tree planting, spraying and removal, bridge inspection and repairs, zone painting, highway signing, traffic and flasher light installation, winter maintenance, day labour projects and asphalt plant operations.

The winter employment program carried out by day labour forces consisted of repairs to highway landscaping, clearing, grubbing, fencing, rock excavation, granular base, as well as construction and repair of bridges, picnic sites and road-side parks. This work produced good results and was comparable in size to the previous year's program, which provided employment for approximately 8,000 men, between 1,500 and 2,000 of whom were hired locally for this particular work.

The foregoing generally indicates the achievements of this year and the following sectional breakdown illustrates the expanded operations in complete detail.

Engineering Audit Section

L. R. Eadie, Superintendent

The Engineering Audit Section is divided into two major subsections: Field Audit and Contract Checking. It operates as follows:

Regular field spot checks of pre-engineering cross-sections are made to ensure the accuracy of the survey work in the preparation of contracts. A representative number of pre-engineering contract estimates, as prepared by the Road Design office are also reviewed.

Field spot checks of original and final cross-sections are made to ensure accuracy of the survey work. Field notes are further reviewed in the Regional Offices, prior to the submission to the Electronic Computing Centre for plotting. For contracts which are not processed by the E.C.C., field note reduction and plotting are checked and prints or cross-section rolls are secured and sent to the appropriate district office.

During the progress of a contract, periodic field and office audit surveys are made to ensure that monthly payments to the contractor are representative of work completed. In these surveys the same emphasis is placed on underpayments as on overpayments.

Where actual "As Constructed" quantities vary considerably from the original tender, the reasons for these over-runs or under-runs are obtained. These facts are brought to the attention of the Road Design or Bridge Design offices.

Frequent visits are also made by our audit weigh inspectors to ensure that the approved regulations for the supply and control of weighed materials are being followed.

All work orders and supplementary estimates are reviewed to ensure that head office personnel have been supplied with accurate details. If available, further information is brought to the attention of the construction engineer.

Force account payment certificates are reviewed, and any pertinent information secured during our progress audits is brought to the attention of the construction engineer.

Where "Intents to Claim" are received, a visit to the contract is made and sufficient details obtained to make a report to the Claims Engineer.

Later, these claims are recorded in a claims register and each quarter a report is prepared showing the number of claims received and outstanding, and the reason for each claim. This report is distributed to all departmental branch heads.

After the acceptance of a contract by the district engineer, progress audit reports are made on the preparation of the final estimate to ensure the completion of final quantities within the time limits specified in Form 100.

The Contract Checking Subsection reviews all final quantities on construction and maintenance contracts or projects to ensure that specifications and standards are met. The final payment to the contractor is based on the quantity calculations, checked by this group.

A comparison is made of the materials supplied by the Department and the materials incorporated into the contract as based on the final estimate quantities. A report on this subject is forwarded to the internal auditor. Roadway fill cross-sections are also reviewed and, where necessary, an over-building quantity is calculated. In addition, head office road plans and profiles are amended with "As Constructed" data. Prints are sent to the appropriate district office for their future use.

OPERATIONS BRANCH

H. W. ADCOCK, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P.Eng.
Construction Engineer

*Regional
and
District
Engineers*

MAINTENANCE
C. Tackaberry, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

During the 1959–60 fiscal year construction proceeded at the high rate established in the immediate past several years.

Considerable stress was placed on the three main projects which the Department has under way — Highway 401, the Trans-Canada Highway and the Ottawa Queensway. A heavy amount of work was carried out during the year on each project. In addition there was the reconstruction of various main and secondary highways and the building of a large number of new bridges throughout the Province.

The work was well spread out and all sections of the Province received the benefit of new and reconstructed highways and newly built bridges.

The more important work carried out in 1959–60 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford, Owen Sound Districts.

Reconstruction of Highway 98 was finished from Blenheim to Merlin, thus completing the reconstruction work on Highway 98 from Tilbury to Blenheim. The paving of the north lane of Highway 402 from Sarnia easterly to Perch Creek was completed. The Amherstburg By-pass was finished in 1959. The section of Development Road 471 from Courtright to Kimball was completed, and the rebuilding of Highway 40 from Chatham northerly was commenced. The rebuilding of Highway 22 was finished from Highway 4 westerly for a distance of 14 miles, and the new bridge on Highway 2 over the Thames River at Delaware, including approximately 2 miles of improvement to Highway 2 east and west of Delaware, was also finished. Two new underpasses on Highway 401 between Eastwood and Highway 4 were completed during this past year.

Grading and structures on Highway 401 from Highway 8 to Eastwood, covering approximately 25 miles, was under way, as was improvement to Highway 3 between Tillsonburg and Aylmer. On Highway 19, considerable reconstruction was started from Stratford to Milverton, and Woodstock northerly, covering 25 miles in all. Reconstruction work on Highway 97 from Galt northerly commenced, while resurfacing on Highway 21, Bayfield to St. Joseph, was completed. There was also reconstruction on Highway 100 from Thamesford northerly for 5½ miles.

The new bridge over the Saugeen River on Highway 21 was completed and opened to traffic, as was the new structure on Highway 90 over the Nottawasaga River at Angus, this steel truss bridge being the only "all welded" structure in the Province.

On Highway 6, paving was carried out from Durham to Dornoch, and from Mount Forest to Orchard. Also, on Highway 6, reconstruction is under way from

Miller Lake to Ferndale Corners, covering 10 miles. The rebuilding of Development Road 384 from Shelburne westerly continued to a point 13.2 miles west of Shelburne. Highway 10 reconstruction work was carried out from Orangeville to Camilla.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts.

On Highway 401, grading was completed and structure work was nearly finished between Highway 25 at Milton and Highway 8, a distance of approximately 25 miles. Important interchange work at the intersections of Highways 6, 8, and 24 with Highway 401 was under way. New concrete pavement on Highway 401 covering approximately 13.5 miles from Highway 10 to Highway 25 was opened to traffic. Resurfacing of Highway 401 from West Hill to Ajax was completed, and about 50 per cent completed from Ajax to Oshawa. On the section of Highway 401 between Newcastle and Port Hope, the paving work was 80 per cent completed. Grading and structure work on Highway 401 from Port Hope to Brighton was virtually completed, and interchange work at the intersections of Highway 401 and Highways 30 and 45 was well under way.

Highway 400 was much improved by resurfacing 10 miles of concrete paving from Highway 401 northerly, and the new Highway 400 Extension was opened for traffic from Crown Hill to Coldwater. Grading and structures on the Coldwater By-pass were finished.

Reconstruction work on Highway 8 from Peter's Corners to Sheffield, on Highway 53 from Highway 6 to Elfrida, and on Highway 20 from Elfrida to Stoney Creek was completed in 1959. This last section of highway was rebuilt to four lanes.



Don Valley Parkway looking east in the Don Mills Interchange area, Toronto District.

Rebuilding of Highway 6 from Caledonia to Hagersville was started, while the new major structure on Highway 5 over the Oakville Creek, which will eliminate a dangerously narrow bridge, was about 80 per cent finished.

The first contracts preliminary to the construction of the new bridge over the Welland Canal at Homer were awarded in January 1960 and were almost completed by the end of the fiscal year.

Work of major importance on the Q.E.W. between Toronto and Hamilton was carried out, including the widening of the Bronte bridge, and a major interchange at Shook's Hill. The interchange at Mississauga Road and the Q.E.W. was completed early in the year. Considerable amount of service road work adjacent to the Q.E.W. was completed, as were several flyovers. Work was started on the widening of the Credit River and Oakville Creek bridges, as was work on the interchange at the Bronte side road. The new interchange on the west side of the Bronte bridge was completed in the late fall.

On Highway 27, a new bridge over the C.N.R. and new connections to Highway 2 were finished. This completed the four-lane work on Highway 27 from the Q.E.W. to Highway 2.

Reconstruction work from Ringwood to Ballantrae on Highway 48 was completed. Work on the Peterborough By-pass from Highway 28 to Highway 7 east of the Otonabee River progressed well, including the 1,000-foot structure over the Otonabee River. Reconstruction on Highway 28 from Peterborough to Frasersville was completed.

Highway 7 from Oakwood to Highway 12 was improved considerably by resurfacing and widening of shoulders. The diversion of Highway 12 at Gamebridge to improve the crossing of the Trent Valley Canal, was approximately 82 per cent completed at the end of the year.

The reconstruction of Highway 33 from Wellington to Bloomfield was completed, while the rebuilding of Highway 14 between Rossmore and Crofton was commenced.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts.

On Highway 401, paving from the Joyceville side road to Gananoque was finished, and reconstruction of the south lane from Gananoque to Crystal Beach was almost completed. The new concrete pavement on the south lane of Highway 401 from Crystal Beach to Prescott, covering 18 miles, was opened to traffic. Grading and structure work on Highway 401 from Highway 38 to Odessa was under way, while north of Napanee, Highway 401 subway approach work was started.

Grading and structure work progressed favourably on Highway 401 from Highway 16 easterly to Iroquois and from Cornwall easterly to east of Lancaster.

A heavy amount of work was performed on the Ottawa Queensway on grading, structures, paving and interchanges. The work was located in two main areas, from Green's Creek to central Ottawa, and from Carling Avenue to near Highway 15. Interchange work at the intersection of the Queensway and Highway 15 has just commenced. Reconstruction of Highway 15 continued, with work under way on the section from Morton to Elgin.

Highway 2 from Gananoque to Crystal Beach, covering 24 miles, was much improved with resurfacing. Rebuilding proceeded on Highway 38 from Glenvale to Hartingdon. On Highway 17, east and west of Haley's Station, reconstruction work was completed, as was grading and structure work on the Carleton Place By-pass, with this by-pass opened to traffic.

A long diversion of Highway 15 from Perth easterly for over 7 miles was finished, with the paving work completed in the early summer. Paving work was carried out on Highway 43 from Chesterville to Highway 31, and Highway 34 from Lancaster north for 14 miles was improved by resurfacing. Reconstruction of Highway 41 from Kaladar to Northbrook progressed favourably, and reconstruction of Highway 62 from Barry's Bay to Combermere was started.

The new bridge over the Madawaska River at Combermere was approximately 75 per cent completed by the end of the year.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury and Sault Ste. Marie Districts.

The widening of Highway 11 to four lanes from north of Crown Hill to the north end of the Orillia By-pass progressed well. The Huntsville By-pass on Highway 11 was opened to traffic in the late fall. A small amount of paving on Highway 103 at Port Severn was finished. This completed 31 miles of new highway between Waubaushene and Footes Bay.

Heavy rock work continued on the reconstruction of Highway 69 from north of Pointe-au-Baril to the Magnetawan River, while the newly graded 19-mile section of Highway 69 from Nobel to north of Pointe-au-Baril was approximately 50 per cent paved, with traffic now using the entire section. The westerly 12 miles of Highway 60 in Algonquin Park was rebuilt. Grading work on the new connection between Highway 28 and Secondary Highway 500 was completed.

Grading and structure work was completed on the Callander By-pass, and the paving work was finished by late fall. Resurfacing of the North Bay By-pass on Highways 11 and 17 progressed well. The reconstruction of Highway 11 north of Sundridge to south of Burks Falls was started. The rebuilding of Highway 17 which included grading, paving and structures, continued east of North Bay to a point 15 miles east of North Bay, and from Chalk River to Deep River, a distance of $6\frac{1}{4}$ miles.

A large structure on Highway 11 over the Montreal River at Latchford, which will eliminate the crossing of that river on the top of the dam, was completed, except for the deck. The grading of the upper half of the new 18-mile diversion of Highway 11 from Matheson to Porquis was completed, and work preparatory to paving started.

Highway 11 reconstruction from Earlton southerly, covering 8 miles approximately, commenced, and reconstruction of Highway 66 easterly from Kirkland Lake continued to a point 15 miles east of Kirkland Lake. The rebuilding of Highway 101 for 8 miles westerly from the Quebec Boundary was completed. Ten miles of a new resources road from Foleyet westerly were finished by the end of the year. On Highway 68, reconstruction from Espanola continued, with a major

structure over the Spanish River approximately 90 per cent completed, and the grading south of Espanola for 10 miles continued favourably.

The resources road from south of Burwash westerly for 4.2 miles was finished. On Highway 17 the Thessalon By-pass was opened to traffic, while north of Sault Ste. Marie work was carried out on a continuous 24-mile section from the Soo northerly to Havilland Bay. The easterly 9.4 mile portion of the new road from Chapleau to Wawa was completed.

The building of access roads from Secondary Highway 612, Elliott Lake area, continued. Good progress was made on a 12-mile section of a new resource road from Chapleau easterly.

NORTHWESTERN AREA—White River Project, Cochrane, Fort William and Kenora District.

The heavy concentration of work in reconstruction of Highway 11 continued south and west of Cochrane, and between Hearst and Kapuskasing, covering 22 miles in the first location and 50 miles in the second. This work included grading and paving. In addition, major structures were commenced over the Missanabie River at Mattice and over the Kapuskasing River at Kapuskasing.

Trans-Canada Highway work between the Agawa River and Marathon progressed favourably. Grading continues between approximately Mile 10 and Mile 20 north of Wawa, and between approximately Mile 10 and Mile 17 south of Wawa, with the balance of grading in the Gap virtually completed. Paving has been completed from Marathon to White Lake Narrows for 19 miles east and west of White River. Work on paving contracts has been under way on the following: east and west of White Lake Narrows for 9 miles; 9 miles east of White River easterly for 20 miles; north and south of Wawa for 19 miles; and north of the Agawa River for 15 miles. Work on several structures was completed, and continued on others, including the large structures over White Lake Narrows and the Agawa River.

A very large amount of work was performed on Highway 17 north of Lake Superior. This work covered 59 miles in all, and included extremely heavy rock and earth grading, paving, and bridges. The reconstruction of Highway 17 between Nipigon and Port Arthur continued, and it is expected the rebuilding of this entire section of highway will be completed in a little more than a year's time. South and northwest of Raith, over a distance of 19 miles, reconstruction of Highway 17 continued, as did rebuilding work west of Ignace, east and west of Vermilion Bay, east from Longbow Corners, and easterly from the Manitoba Boundary. This work included grading and paving, and covered 81 miles in all. The new bridge over the Winnipeg River at Kenora was opened to traffic.

The work of extending the Atikokan Highway westerly from Atikokan towards Fort Frances was started. Good progress was made on the Rainy Lake Causeway at Fort Frances, on both rock work and structures.

Improvement of Highway 71 was made from Rainy River easterly in the form of resurfacing, while at Rainy River work was carried out on the new approach to the International Bridge over the Rainy River. Work has progressed favourably on four resources roads: Savant Lake southerly, Kowkash to Jeffries Lake, from Minaki southerly, and from a point 30 miles north of Highway 17 east of Port Arthur northerly.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1959-60

Hwy. No.	4-Lane Highways	Miles
402	Hwy. 7 to Canada Customs, Sarnia.....	3.30
401	Hwy. 10 to Hwy. 25.....	13.52
401	Joyceville side road to Gananoque.....	10.29
20	South of Stoney Creek to Hwy. 53.....	3.50
11	Crownhill north.....	7.00
TOTAL.....		37.61
	2-Lane Highways	
18	Amherstburg Diversion.....	1.10
400	Crownhill to Craighurst (base pavement only).....	10.04
15 T.C.	Perth to Drummond Centre (previously reported open as gravel road).....	7.50
15 T.C.	Innisville By-pass (previously reported open as gravel road).....	1.06
15 T.C.	Carleton Place By-pass (open as gravel road).....	2.48
11	Huntsville By-pass (base pavement only).....	5.88
400	Craighurst to Coldwater (base pavement only).....	11.90
400	Coldwater By-pass (base pavement only).....	1.90
11	Callander By-pass.....	2.40
17	Rouse Lake to White Lake Narrows.....	18.92
17	11.7 mi. west of White River to 7.5 mi. east.....	19.20
11	Matheson to Monteith (previously reported as base pavement only).....	9.30
17 T.C.	Thessalon By-pass.....	3.26
TOTAL.....		94.94

SUMMARY OF NEW BRIDGES COMPLETED 1959-60

During the Fiscal Year 1959-60 the number of structures completed was 116

MAINTENANCE

C. TACKABERRY, P.Eng.—Maintenance Engineer

Inspection and Maintenance of Bridges

Our Bridge Maintenance Section performs a very important function in our maintenance operations and, in this connection, 65 per cent of the bridges on the Provincial highways were inspected, a total of approximately 1,500 structures.

During 1959, there were at least 12 bridges on the King's Highway system that were so damaged or aged that replacements might have been necessary but for the use of Bailey bridging.

The Kinmount bridge over the Burnt River on Highway 121 showed a complete brittle fracture of the main bottom chord member. Heavy traffic was detoured a few days until splice reinforcing and Bailey bridge reinforcing was placed. Normal traffic was then maintained until repairs were completed.

The Indian Point bridge on Highway 540 in District 17 was damaged beyond repair in April. Here damage was caused mostly by age and normal highway traffic. A Bailey bridge was erected over the deck of the old bridge within a few days and normal traffic was resumed.

The old timber covered bridge at West Montrose finally was unable to support automobile traffic. Bailey panel was used to reinforce one span and light traffic was maintained for the summer.

At Fairchild Creek on Highway 99, District 4, two trusses were so badly corroded that the structures were limited to 5-ton loads. Bailey panels were used to support the truss and normal traffic was resumed.

The aforementioned is a sample of the types of operation necessary to keep structures adequate for highway loading. The work has to be performed quickly, and with the co-operation of the Bailey Bridge Section we have been able to supply iron work that would have been unobtainable without serious delays.



One of D.H.O.'s 15 snow blowers in action on Highway 21 in Stratford District.

The largest single bridge maintenance operation during 1959 was done on the Blanche River bridge on Highway 11 at Englehart. This structure built in 1932 was being damaged due to lack of expansion. By removing this restraint and installing "Andre" type rubber bearings we were able to re-habilitate the structure to reduce the damaging vibration. This was the first application of rubber bearings in Ontario and their satisfactory behaviour more than met our expectations.

The regional bridge repair crews at Toronto, London and Kingston were developed from one large crew at Toronto. These units made various repairs and deck replacements to structures in the surrounding district.

Many of the Districts have their own repair and maintenance sections that did some very good work. By keeping a small staff occupied and acquiring experience, they are able to handle emergency work when the need arises.

Department-owned Hot Mix Plant

This plant operated on Highway 11 from a gravel pit, located 10 miles west of Cochrane and in a quarry 16 miles west of Kapuskasing. The total production for the season was 62,806.97 tons, representing 33.12 miles of paved highway.

Zone Painting

Zone painting operations were commenced early in the season and were continuous during the summer months, throughout the entire province. This year we included 290 miles of the county road system in our zone painting operations. We now have 19 zone striping machines, four of which are of the dual type. During the winter one new dual zone striping machine was constructed in our shops at Downsview.

Signs

Signing continues to be a very important function of this department. The signing of new interchanges on 4-lane highways represents a considerable proportion of this operation. We are continuing with the erection of overhead signs and have had many favourable comments from the motoring public on same.

Electrical

Our Electrical Section had a very busy year, 26 traffic signals and 24 flashers being installed during the year as well as a number of lighted signs.

Highway lighting was installed at the following locations:

DISTRICT 1:

- Hwy. 401 and Hwy. 98 interchange, Windsor.
- Hwy. 401 and Hwy. 3 interchange, Windsor.
- Hwy. 2 and Hwy. 98 channelized intersection, Windsor.
- Hwy. 401 and Hwy. 3B interchange, Windsor.

DISTRICT 2:

- Hwy. 2 and Hwy. 24A channelized intersection and reconstructed Hwy. 2 within town limits, Paris.
- Exit ramp from Hwy. 401 to Hwy. 2, Eastwood interchange.
- Hwy. 2 and Walnut St. channelized intersection, Paris.

Hwy. 4 and Hwy. 22 channelized intersection, London.
Hwys. 2, 4, and 135 channelized intersection, London.
Hwy. 401 and Wellington Rd. interchange, London, under construction.
Hwy. 22 and Louise Blvd. intersection, London, under construction.
Hwy. 2 in Village of Thamesford, D.H.O. contribution 50 per cent.
Hwy. 24 in Village of Mount Pleasant, D.H.O. contribution 50 per cent.
Hwy. 7 in Village of Ailsa, D.H.O. contribution 50 per cent.

DISTRICT 3:

Hwy. 7 and Conestoga Rd. channelized intersection, Breslau.
Hwy. 24 and Wellington County Rd. channelized intersection, Erin.

DISTRICT 4:

Q.E.W. and Bowen Rd. interchange, north of Fort Erie.
Q.E.W. and Beach Rd. interchange.
Q.E.W. and north access and exit roads to Burlington Bay Skyway.
Hwy. 58 and Broadway Ave. channelized intersection, Welland.
Hwy. 5 and Hwy. 25, Nelson.
Hwy. 5 and Brant St., Burlington.
Hwy. 5 and Sydenham Road.
Hwy. 53 and Green Road, Ancaster.
Hwy. 25 and Francis Rd., Aldershot.
Hwy. 8 in Twp. of Saltfleet, vicinity of Winona, D.H.O. contribution 50 per cent.

DISTRICT 5:

Hwy. 26 and County Rd. 7, north of Stayner.

DISTRICT 6:

Q.E.W. and Bronte Rd. interchange, west of Bronte bridge.
Hwy. 401 and Hwy. 27 interchange.
Hwy. 27 and Hwy. 49 channelized intersection, Kleinburg.
Hwy. 5 and Dixie Roads channelized intersection.
Hwy. 2 and Hwy. 27 channelized intersection.
Q.E.W. and 5th line of Toronto Twp. Rotary interchange, under construction.
Q.E.W. and Parklawn Overpass, Etobicoke Township.
Q.E.W. and Grand Ave. Overpass, Etobicoke Township.
Hwy. 27 and North Queen St. Underpass, Etobicoke Township.
Hwy. 27 and Bloor St. Overpass, Etobicoke Township.
Hwy. 27 and Burnhamthorpe Rd. Overpass, Etobicoke Township.
Hwy. 401 and Kipling Rd. Overpass, Etobicoke Township.

DISTRICT 7:

Hwy. 133 and Hwy. 28 channelized intersection, Peterborough.
Hwy. 36 and Hwy. 36B channelized intersection, Lindsay.
Hwys. 7, 7B and 35 channelized intersection, Lindsay By-pass.
Hwy. 401 and Hwy. 115 interchange, Newcastle, under construction.

DISTRICT 9:

Hwy. 2 and Hwy. 31 channelized intersection, Morrisburg.
The Queensway, Ottawa, under construction.

DISTRICT 11:

Hwys. 11 and 11B interchange, Forest Home.
Huntsville By-pass and Township Road.
Hwy. 11 and Hwy. 516 (Port Sydney Road).
Huntsville By-pass and Hwy. 11 channelized intersection, north end.
Huntsville By-pass and Hwy. 11 channelized intersection, south end.
Hwy. 12 and Hwy. 103 channelized intersection, Waubaushene.

DISTRICT 13:

Callander By-pass at south end — channelized intersection.
Callander By-pass at Hwy. 94.
Callander By-pass at north end — channelized intersection.
North Bay By-pass at Hwy. 63, channelized intersection, under construction.

DISTRICT 16:

Hwy. 11 in Smooth Rock Falls, D.H.O. contribution 50 per cent.

DISTRICT 17:

Hwy. 17 and Hwy. 536, Creighton Mine Road.

DISTRICT 18:

Hwy. 108 and Hwy. 7 intersections in Elliot Lake.
Thessalon By-pass and Government Road.
Thessalon By-pass and Hwy. 129.
Thessalon By-pass and Hwy. 17B.
Hwy. 17, Blind River bridge.

Forestry

The planting of trees and shrubs on new contracts again contributed substantially to the Forestry and Landscape Operation, and included planting 89,936 trees and shrubs. However, the normal tree-planting operations was augmented by the introduction of a new mechanical method of relocating large trees which would otherwise be destroyed in road widening. The machine, known as the "Tree Saver", has been used in several districts to good advantage. Trees up to 12 inches in diameter have been successfully relocated in this manner.

Grass-seeding operations covered 5,027 acres, involving all but one district in the province.

Weed and brush control increased in 1959 to cover a total of 6,217 miles. In addition, study has been given to chemicals for sterilizing soil in specific areas where vegetative growth is unwanted. Two such areas under test are (1) shoulders of median strips and (2) guide rail areas.

Weigh Scales

Eight new scales have been installed in 1959 at the following locations:

1. District 1, junction of Hwys. 7 and 21, 30-ton 10 x 10 axle load.
2. District 1, Hwy. 3, 1.5 miles west of Morpeth, 30-ton 10 x 10 axle load.
3. District 2, Hwy. 401, 1.8 miles west of Hwy. 73 on westbound lane, a 30-ton 12 x 10 axle load.
4. District 2, Hwy. 401, 1.8 miles west of Hwy. 73 on eastbound lane, a 30-ton 12 x 10 axle load.

5. District 8, Hwy. 401, at Ivy Lea, a 30-ton 10 x 10 axle load.
6. District 11, Hwy. 69, 5½ miles north of Parry Sound, a 30-ton 10 x 10 axle load.
7. District 13, North Bay By-pass, ½ mile west of North Bay, a 30-ton 10 x 10 axle load.
8. District 16, Hwy. 11 at Hearst, a 30-ton 12 x 10 axle load.

There are 44 scales installed at the present time in the province, consisting of 24, 10 x 10 axle load; 4, 12 x 10 axle load; and 20 platform scales.

Winter Maintenance

Although snowfall during the winter of 1959-60 did not set a record for total winter snowfall in many areas, the winter was one of the most difficult for winter maintenance experienced in several years.

Winter arrived early in Northern Ontario with several heavy snows. Late in December several freezing rain storms occurred within a period of one week, striking heavily throughout the Hamilton, Toronto, Port Hope and Kingston areas where much of Ontario's traffic is concentrated. In addition to hazardous driving conditions and the use of large quantities of chemical and abrasive to provide as safe driving conditions as possible, these freezing rain storms damaged shrubs and trees along the highway to such an extent that removal of debris and treatment or repair of highway landscape required months to perform.

In late winter heavy snow accompanied by high winds caused severe drifting, again at its worst in the heavy traffic areas of Southern Ontario.

A winter employment program was carried out by day labour forces during the winter months, and included such projects as storm damage repairs to highway landscape, clearing, grubbing, fencing, rock excavation, granular base, bridge repairs and bridge construction.

As in previous years, development work on picnic sites was carried out as a winter employment program, with the Federal Government contributing to 50 per cent of the cost of this work. A total of 78 sites were developed this year as part of this program.



Hot Mix paving on Bruce County Road No. 3 north of Walkerton, Owen Sound District.

TABLE SHOWING TOTALS OF WORK DONE, 1959-60

Class of Work	No.	Tons	Miles
Automatic signals at railway crossings.....	46	.....	.....
Bituminous hot mix pavement.....	.....	1,718,771	430
Bituminous mulch and cold mix.....	.....	229,584	145
Bituminous prime on gravel roads.....Gals.	2,819,466	.....	943
Bituminous resurfacing old pavement.....	.....	567,992	307
Bituminous surface treatment.....Gals.	1,220,224	.....	422
Bridges built.....	116	.....	.....
Bridges painted.....	15	.....	.....
Calcium dust layer — gravel roads.....	.....	8,885	2,289
Calcium for de-icing roads.....	.....	195	.....
Concrete base pavement — asphalt top.....	.....	1,710	1
Concrete pavement.....	.....	342,744	33
Crushed gravel and stone (by contract).....	.....	4,787,863	1,863
Crushed gravel and stone (by Dept. Forces).....	.....	809,378	5,999
Grading and culverts.....	.....	.....	580
Granular base on new grading.....	.....	18,965,330	553
Granular base on old grading.....	.....	1,796,370	848
New buildings erected this year.....	66	.....	.....
Off-road parks maintained.....	85	.....	.....
Roads snowploughed and kept open (King's Hwys.).....	.....	.....	9,643
Roads snowploughed and kept open (Secondary Hwys.).....	.....	.....	2,513
Roadside picnic places maintained.....	1,020	.....	.....
Routine maintenance (King's Hwys.).....	.....	.....	9,555
Routine maintenance (Secondary Hwys.).....	.....	.....	2,571
Salt for de-icing roads (raw).....	.....	142,708	.....
Salt in sand, stockpiled.....	.....	47,591	.....
Sand for winter maintenance.....	.....	892,544	.....
Scale houses maintained.....	41	.....	.....
Seeding by Department Forces.....Acres	4,989	.....	.....
Shrubs received and planted.....	55,486	.....	.....
Signs newly erected or replaced.....	74,560	.....	.....
Snow hedges planted this year.....	.....	.....	20
Snow fence erected, dismantled, stored.....	.....	.....	1,203
Traffic lights installed this year.....	12	.....	.....
Weed control.....	.....	.....	5,811
Zone painting (King's Hwys.).....Gals.	138,709	.....	9,952
Zone painting (Secondary Hwys.).....Gals.	5,649	.....	416

CONTRACT WORK FOR 1959-1960

T. C. MUIR, P.Eng.—Contract Control Engineer

This year witnessed a reduction in the number of contracts awarded over the previous year with 393 contracts of all types being awarded. However, this reduction, although somewhat indicative of the Department's policy to curtail some of the capital work, is not fully representative of a major reduction, since several of the contracts called this year were contracts of a combination type, which in previous years would have been called in 2 or 3 contracts rather than under one contract. This was made possible due to the inclusion of structures within a grading contract, or the inclusion of paving with a grading contract.

Although the total number of contracts were reduced, the volume of work for contract preparation maintained its previous year's peak, due to a further expansion in the quality and quantity of Special Provisions required for a contract.

The specification manuals initiated the previous year, wherein some 500 books of specifications were prepared and issued to departmental personnel, was augmented by the inauguration of the policy to distribute such manuals to the Construction Industry as a whole. This expanded the manuals of specifications now in use to approximately 2,000, involving the Construction Industry, Municipalities and many Consulting Organizations.

This year saw a very rapid increase in the instigation of the Department's qualification procedures, of which the Department was a pioneer in Canada for highway construction work. From a careful study and analysis of the years 1957 and 1958 contracts the adoption of pre-qualification during 1959 was extended to over 70% by dollar volume of the contracts called during the 1959-1960 fiscal year. It is anticipated that with the expansion of pre-qualification to include Trans-Canada Highway contracts, this percentage could attain between 90-95%.

In a like manner the procedures concerning "liquidated damages" in contracts, an innovation in Canada by the Department in road building work, were given considerable impetus this year. Due to the well defined programming and scheduling of contracts it was necessary to adopt "liquidated damages" in over 76% of the total number of contracts called during this period. This again is a most augmented program over the study applications of "liquidated damages" during the 1957 and 1958 construction seasons.

A departure from the normal unit price type of contract work during 1959 was the calling of a few contracts under what is known as an "Equipment Rental" Contract, wherein the Department calls for tenders on certain types of equipment for a certain period of time. This policy pertains basically to Resources and Mining Access Roads wherein time is of essence to have the contracts under way as quickly as possible, and where time is also not available for an exhaustive field survey and office design.

SUMMARY OF CONTRACT WORK AWARDED FOR 1959-1960 AS FOLLOWS:

Type of Work	Total
MAINTENANCE	
Prime Dust Layer	11
Crushed Gravel	76
Hot Mix Patching.....	18
Resurfacing	5
Surface Treatment.....	5
Winter Sanding.....	22
Screened Sand	16
Bridge Painting	—
Clearing	—
TOTAL	153
CONSTRUCTION	
Concrete Paving.....	3
Grading and Culverts.....	41
Hot Mix Paving	70
Structures	69
Structural Steel	28
Crushed Gravel.....	23
Resurfacing.....	2
Granular Base and Miscellaneous.....	4
TOTAL.....	240
GRAND TOTAL — MAINTENANCE, CONSTRUCTION...	393

MATERIALS AND RESEARCH SECTION

A. RUTKA, P.Eng., *Materials and Research Engineer*

Operations of the Materials and Research Section during the fiscal year 1959-1960 may well be recorded as a year of peak achievement in its relatively brief history of operation. Decentralization in accordance with Departmental policy was effected with the exception of North Bay Region where office and laboratory accommodation remains the prime requisite; with a greater utilization of mobile laboratories and temporary field laboratories, an increased amount of on location testing and quality control was realized; the Foundations and Chemical groups broadened their scope of activity by conducting a greater number of foundation investigations and a greater variety of material testing on materials previously not delineated by specification control.

In co-operation with the Planning and Design Branch, a two-mile stretch of experimental pavement utilizing 8 different combinations of concrete base and asphalt top plus a section of continuously reinforced concrete pavement was constructed on Highway 401, east of Highway 25. It is hoped that this experiment, over a period of time, will furnish valuable data for future highway construction.

Two technical papers on bituminous highway construction were presented by staff members at the Fourth Annual Conference of the Canadian Technical Asphalt Association at Winnipeg, Manitoba, a paper on culvert installation was presented at the Ontario Good Roads Association's Road School for Road Superintendents at the University of Toronto, and a paper, in conjunction with the National Research Council, on evaluation of road performance over Muskeg in Ontario was presented at the Canadian Good Roads Association in Vancouver. In conjunction with a special committee on Pavement Design and Evaluation sponsored by the Canadian Good Roads Association, our Special Projects group played an active part in securing and compiling field data for a report entitled "Study of Half-Load Restricted Pavements."

The following technical reports were published and distributed during the year:

1. Effect of Sand Grading Variations on Bituminous Mixes.
2. Moisture Difficulties and Aggregate Drying Problems in Hot Mix Construction.
3. Proper Practices in Culvert Installation.
4. Soil Stabilization — Stabilized Shoulder Test Sections — Huntsville District.
5. Soil Stabilization — Stabilized Shoulder Test Sections — Sudbury District.
6. Experiences with Inco Slag for Highway Construction Purposes.

As technical representatives for the Department, staff members participated in Technical Associations and Committees both in Canada and in the U.S.A. Some of these associations are:

1. Highway Research Board, Washington.
2. Canadian Technical Asphalt Association at Winnipeg. Our representative is a director of this association.

3. Association of Asphalt Paving Technologists.
4. Canadian Standards Association, Saskatoon.
 - (a) Committee on Hydraulic Cements
 - (b) Sub-committee on Fineness of Portland Cement
 - (c) Committee on wire fencing
 - (d) Committee on soil sampling
5. Canadian Government Specification Board — Committee on Road Materials.
6. American Society of Testing Materials.
7. American Society for Metals, Toronto.
8. Canadian Good Roads Association.
9. Canadian Soil Mechanics Committee, National Research Council.
10. Joint investigation of moisture problems in hot mix construction with Michigan State Highway Department.

Foundations and Soils Subsection

The shortage of experienced engineering personnel directly affected the amount of work which this subsection was able to undertake. A few experienced foundation engineers were procured during the year which permitted the Department to carry out a higher proportion of foundation investigations than in previous years, but over 40% of the work had to be let out to engineering consultants. With two Department drilling crews continuously employed, and the services of drilling contractors, 123 structure sites were investigated and design reports and recommendations submitted. Investigations completed were 122% greater than the previous year. This increase required 16,224 feet of drilling comprising of 1,271 feet through bedrock and 14,047 feet by cone penetration. Engineer Consultants were contracted to carry out investigations and submit design reports on 90 projects.

Due to the very heavy pre-engineering programme the soils group spent very little time at quality control of construction. Most of the compaction checks and sampling of materials for laboratory testing purposes, were undertaken by the District inspection staff with a minimum amount of guidance from the Soils Engineers. In accordance with the Department scheduled programme, most of the soils pre-contract investigational work was completed. Soils design, grade recommendations and recommendations as to suitability of materials were submitted in report form to the Planning and Design Branch on a total of 187 projects. This work covered 1,027 miles of proposed construction involving 543 miles of subgrade checks by power equipment and 189 miles of pedological surveys. In addition, surveys for general road performance and frost heaves were performed on 2,551 miles of pavement.

Further, this group undertook to priority rate on the basis of performance, the construction programme for 1962-65 which encompassed all Districts and 188 projects. Six special surveys requested by the Pre-Planning group of the Locations Section were also started.

Materials Subsection

The introduction of a Bituminous Mobile Laboratory designed to provide on site compaction control and mix design checks on special problematical bituminous contracts, proved most valuable. It was utilized throughout the province, and also serviced preconstruction to overcome material problems such as aggregate drying, grading variations in stockpiles and urgent requirements for additional sources of blending materials.

Technical and advisory assistance was rendered to all Districts by the bituminous engineering and quality control inspection staff on a total of 101 contracts. Assistance was also given on several paving problems encountered by the Municipal Roads Branch.

In order to expedite the granular pre-engineering investigations, two additional test boring units were contracted in the middle of the season. As a result, only 5 projects remained outstanding for detailed equipment investigation, along with 8 projects for preliminary studies and 11 projects for quantity determinations. In the 12-month period, completed preliminary work increased by 62%, pits investigated with power equipment by 9%, and samples taken by 20%. Commercial suppliers were visited regularly for product examination and 463 samples were processed to ensure adequate quality control of the product within the limits of Department specifications.

The concrete group has continued to

- (i) provide technical advice on the use of portland cement concrete;
- (ii) conduct investigations of problems and development of remedial measures;
- (iii) study performance of concrete pavements and structures with a view to arriving at the best design and quality of concrete;
- (iv) provide design of concrete mixes;
- (v) give overall quality control of concrete during construction.

Concrete Pavement

Using the new design developed in 1958, namely 99-foot joint spacing with reinforced welded steel mesh and load transfer devices at each joint, concrete pavement was constructed on Highway 401 between Highways 10 and 25 (13.8 miles) and on the Brockville By-pass (18 miles). Under 5 contracts, a total of 650,000 square yards of pavement was laid and overall quality control of the concrete and constituent materials was maintained at each location by field laboratories and quality control inspectors.

During the year considerable progress was made in the technique of laying; in order to produce a better and smoother riding pavement, a new type of final finishing machine was introduced which has proven most successful. D.H.O. Form 313 (Specification for Concrete Pavement and Concrete Base) was revised in December 1959 in order to specify the use of these advanced construction methods.

Experimental Pavement

In the fall of 1958, to determine if and how the load carrying capabilities of a rigid concrete pavement could be combined with the smooth riding surface of

asphalt, it was decided to explore the merits of a composite type of construction for heavily travelled 4-lane controlled access highways.

In conjunction with the Road Design Section of the Planning and Design Branch, a study was made of the existing practice of concrete base with asphalt top construction in both North America and Europe. It was found that gaps in knowledge of this type of construction existed and could only be settled by building an experimental pavement.

Accordingly, 8 different combinations of concrete base and asphalt top were designed, together with a section of continuously reinforced concrete pavement having no joints. These sections, each 1,250 feet long, were incorporated in the westbound lane of Highway 401 east of Highway 25 at Milton over a distance of 2 miles. Each section was equipped with instruments to measure temperatures throughout the depth of the pavement, the strain in the reinforcing steel and the movements of the joints.

The pavement was constructed in the early fall of 1959. It is the first such experimental pavement in North America and is now under observation and test. It is expected that over a period of years this pavement will yield most valuable information for future highway design and construction.

Concrete Structures

The Materials and Research Section has continued its service of technical advice to District Construction Staff and the overall control of quality for structural concrete contracts. During the year quality control staff were in many cases decentralised to the Regional Offices in order to provide better and faster service.

A revision of D.H.O. Form 904 (Specification for Structural Concrete) was prepared in order that the best materials and construction practice could continue to be used in concrete work. This revision included 2 major ideas developed in the field during the year. The first was a plan for inspecting and approving ready-mixed concrete plants prior to use. The second was the latest techniques devised in laboratory and field trials for protecting concrete placed in winter.

Investigational and Development Work

Probably the most interesting investigation was that made into the damaged structure, caused by a fire, at Bronte Creek on the Q.E.W. The formwork and falsework for one of the new arches accidentally caught fire. The nature and extent of the damage both to the old bridge and new work was investigated by drilling out cores and by soniscope testing in which Ontario Hydro played a most valuable part. Proposals for restoration of the concrete evolved and successful repairs were made with new concrete and gunite.

In the field, development work continued in the use of insulated forms for the protection of concrete in winter. Thermocouples were placed at various locations in a number of structures in order to measure concrete temperatures and prove the value of the insulation.

A field quality control study was made of the use of different water reducing concrete admixtures. The study was on a large scale covering all concrete contracts in Southern Ontario and represented the final stage of the acceptance evaluation of the products. As part of the field study of concrete admixtures

trials were made on the control of setting times and the temperature rise experienced in concrete pours. This work, designed to show the benefits of retardation in concrete used in mass pours, yielded valuable information; it is now being extended to bridge decks and other work.

Statistical methods for establishing the effectiveness of various quality control systems have been assessed with the object of making them a routine part of the quality control system.

Chemical Subsection

During the year the Chemical Subsection extended its control over a wider variety of materials and also expanded its technical services. Close co-operation with the Bridge Design, Bridge Maintenance, Purchasing, Supply Control, Traffic and Equipment Sections resulted in the investigation of several field problems and in the preparation or revision of several specifications. These specifications included 3 weed and brush killers, 2 grass seeds, a fertilizer and a bridge primer. Canadian specifications were adopted for quality control of fast-drying primer which is used to shop-coat structural steel, and new colour standards for highway signs. It was also recommended that four specifications for solvents be introduced to permit competitive purchasing and reduce the number of solvents used.

Special field tests conducted in the Toronto area indicated that traffic paints, having at least one year's service life, are available. Therefore, modifications to our traffic paint testing have been made so that these durable paints may be selected. Prepurchase evaluations and quality control tests were made on 154 traffic paints and 45 glass bead samples. In addition, 12 zone marking materials were investigated.

Fifteen special paints such as vinyl and poly-vinyl acetate emulsions were tested for possible Departmental use on bridges; evaluations were also carried out on 6 primers and 50 bridge finish paints to determine those suitable for future purchase. It was also recommended that non-leafing aluminum paint be used to provide contrast between 1st and 2nd coats instead of the present difficult procedure of tinting.

Other types of paint tested include wood primers and sealers, fluorescent, fire-retardant, house, guide rail, equipment and several varnishes. A study is also under way to determine standard and efficient methods of highway sign preparation and maintenance.

Chemical analyses were performed on other materials including 94 soils, 53 water samples, 23 varved clays, 40 calcium chloride brines, 2 lignin sulphate liquors, 78 cements and 6 silicone waterproofing agents. Also 340 salt samples were tested to ensure that salt used for winter road maintenance met highway standards, and technical assistance on methods of sampling and packaging materials was given to Department personnel stationed at supply sources.

Reports were issued covering tests on shipments of 185 tons of grass seed, 50 weed and brush killers and 5 fertilizers. Studies of special materials such as safety helmets and paint brushes were begun to establish purchasing lists of satisfactory items. Other materials included textiles, crankcase and fuel oils, septic tank and outhouse cleaners, concrete anti-freeze agents, anti-corrosion additives for salt, windshield washer solvents, plumb-bob cords, automotive antifreezes and sub-grade papers.

Routine Laboratory

Compared to the previous year, tests conducted by Regional and Mobile laboratories doubled. Nevertheless activities of the Central Laboratory continued to increase and by general reorganization all commitments were met and personnel were also able to apply more time to investigational work and special projects.

A decrease in the number of tests completed for the control of soils, granular materials and soil compaction, was more than offset by quadrupled testing for foundation investigations. The completed tests were 4,044 and 3,312 respectively. A total of 5,192 tests were undertaken in order to maintain quality control and supply mix design for concrete and bituminous contracts. Checks on Commercial sources and the qualification testing of new suppliers resulted in completing 636 tests.

A top course mix design was prepared for almost every bituminous paving contract under construction and as a control medium on the operation of each asphalt plant and bituminous pavement laid, tests were continuously made. These totalled 97 mix designs, 312 asphalt plant checks and 1,426 extractions from pavement samples. Further, control was exercised over refinery production with qualification testing of 3,468 asphalt cements, 378 liquid asphalts and 122 asphalt emulsions.

Due to an increase in the construction of structures and concrete paving operations, control and testing requirements also reflected an uptrend; 1,540 tests on cement (44% increase); 860 organic impurity tests, and 11,222 concrete specimens (8% increase) were tested. 186 mix designs for concrete contracts were prepared for which 744 test cylinders and 50 flexural beams were made and tested. Of special note were the designs made using light weight aggregates and the high strength mixes designed for use in prestressed concrete.

Development testing, as detailed in subsequent paragraphs, required the making and testing of the following:

Mix Designs.....	211
Concrete Cylinders.....	600
Flexural Beams.....	80
Alkalai-aggregate Reaction Beams.....	81
Freeze-thaw Beams.....	336
Tensile Briquettes.....	370
Scaling Slabs.....	228
Bonding Agents and Grouts.....	850

Increased use of Regional and Mobile Laboratories by District personnel was reflected in the upsurge of testing required by them. The following indicates the number of tests performed both this year and last year:

	1958	1959
London Regional.....	2,439	3,222
Kingston Regional.....	107	966
Fort William Regional.....	409	1,246
Ayr.....		411
Brockville.....		1,367
Port Hope.....	1,217	2,092
Streetsville.....		1,050

Inspection and control testing of a variety of miscellaneous materials was continued as a service to the Purchasing Section of Services Branch.

Development Projects

Projects undertaken are related to design, construction and maintenance of provincial highways. Following are studies presently being carried out:

1. *Pavement Evaluation*

Under the sponsorship of the Canadian Good Roads Association, a Special Committee was formed in the Fall of 1958 to study design procedures and evaluate pavements being constructed across Canada. This Committee devised a plan whereby each Provincial Highway Department and Federal Highway Agency, using a standardized test procedure, would undertake a programme to investigate as many miles of existing highway system as possible. In Ontario, approximately 1,000 miles of highway pavements in the southwestern portion of the Province were selected for this study.

Following the plan, as set up by the Committee, the field investigation was carried out in two stages.

Stage 1 — An inventory of paved highway systems was made, subdivided into relatively short homogeneous sections, to determine their adequacy and to develop experimental data from which new pavements might be designed.

The 1,000-mile area selected in southwestern Ontario was divided into 280 test sections. By a panel of five engineers, the pavement performance was rated. The deflections under an 18,000-pound rear axle load were measured on all test sections. Also recorded were other factors influencing performance such as pavement thickness, pavement temperature, traffic volume and environmental conditions.

Stage 2 — Throughout the year seasonal variation in vehicle load carrying capacities were measured on those selected pavements which have known design thicknesses and subgrade soil. Seven highway systems, within the area selected for the inventory stage of the investigation, were divided into approximately 76 test sections. In this phase of the investigation, deflection measurements were made at regular intervals over all of the above mentioned test sections.

At the request of the Special Committee, a load deflection temperature study was carried out on Highway 401, London By-pass. In November, 1959, the investigation was made over a wide range of temperatures and loads, to determine the effect of pavement temperatures and loads on the deflection.

A study was made on approximately 300 miles of pavement which was restricted to half loads each Spring. Our purpose was to determine if the restriction could be lifted on any of the pavements in the Spring of 1960.

2. *Road Roughness*

At the commencement of 1959 a new tow truck was obtained for the Department's Road Roughness Indicator Trailer. The programme for measuring the pavement's roughness as set up by this group and carried out during the summer months consisted of:

(a) Measuring the surface roughness of all newly constructed dual-lane concrete pavements.

(b) Studying the relationship between pavement roughness measurement and performance rating. Approximately 900 miles of pavement were studied.

3. *Soil Stabilization*

This consisted of investigation both in the laboratory and in the field.

(a) Laboratory investigations were carried out to study the effect of brine solution on soil-cement, the factors effecting the strength of Lime Fly Ash soil mixes and the suitability of current specifications for shoulder gravel.

(b) Field investigations and designs were carried out on three county roads. Reports outlining recommended design mixes and procedures were forwarded to the applicable Municipal Engineers. Soil-cement stabilization was tried on four winter sand storage yards in the Toronto District and the recommended design mixes and construction procedures were reported to the Maintenance Engineer.

4. *Soil Investigation*

In 1958 field investigations and sampling of soils series in Peel County were begun. Four hundred additional samples were taken this year with a view to compiling an engineering report of the soil in the county.

5. *Slag*

Two sources of air cooled blast furnace slag and one nickel slag are available in Ontario. As part of a programme to determine its suitability for highway work, its performance as an aggregate in concrete has been tested. It appears that blast furnace slag can be used to produce high quality concrete, although difficulty is expected in controlling air entrainment and finding suitable sands to go with it.

6. *Durability of Coarse Aggregates*

Laboratory testing in the freeze-thaw testing machine continued and in this respect 336 beams were made and tested from 19 different aggregate sources. This is a continuing programme and is designed to examine durability of aggregates under conditions of freezing and thawing. Mainly, aggregates of known poor performances or for use in concrete pavement have been tested to detect deleterious material.

7. *Evaluation of Admixtures*

Scaling tests, using both calcium and sodium chloride, were made on 200 concrete slabs containing admixtures and air entraining agents in use or proposed for use. Results indicate that all products in use will, at the specified air contents, impart satisfactory scaling resistance to the concrete. Satisfactory performance of concrete which is subjected to the action of salts used for deicing in winter, is of prime importance. An evaluation of surface sealers was also made to provide additional protection to concrete placed late in the year and which might not be sufficiently mature to resist salt action.

8. *Protection of Concrete by Silicones*

Freeze-thaw and scaling tests were made on 60 slabs treated with a solution of silicone and made of both air entrained and non-air entrained concrete. It has been claimed that the treatment would enhance the durability of the concrete. The results are to be compared with the effectiveness and cost of the alternative method of minimizing surface scaling as outlined in (7) and field trial studies.

9. *Alkali-Aggregate Reaction*

Tests on an additional 153 specimens completed the investigation of dolomitic limestones from the Kingston area which show expansive characteristics when used in concrete. This, together with studies reported by the National Research Council, has permitted recommendations for safe use of such materials in the area in concrete structures or pavements. As required in the future, similar tests will be made on other limestone aggregates.

10. *Grout for Prestressed Concrete and Cable Ducts*

Approximately 75% complete, the work on this problem continues. The increased use of prestressed concrete has presented a problem of devising a satisfactory method of grouting the ducts in which the high tensile steel reinforcing wires run. Numerous tests have been made to formulate the best pumpable grout which will not segregate in the ducts. Particularly serious in winter, when freezing temperatures have to be considered, the search for suitable admixtures and procedures continues.

11. *Insulated Forms for Winter Concreting*

The programme for testing available commercial insulating materials was completed. It made available to the Department, and to Contractors, the necessary design and use of insulating materials for protecting concrete in winter. During the winter, 15 contractors used the specified methods.

12. *Concrete Bonding Agents*

In the repair and restoration of deteriorated concrete, it is often necessary to bond new concrete to old. Products available to assist in securing a good bond have been both laboratory and field tested.

13. *Analysis of Hardened Concrete*

From samples of deteriorated concrete it is necessary, several times annually, to determine the cause of failure. The laboratory now has equipment to determine air and cement contents by optical examination of concrete sections. This technique and examination of test cylinders which show low compressive strengths is being developed.

14. *Rapid Curing of Concrete Test Cylinders*

A method is under study of determining the maximum strength of concrete test specimens in a few hours rather than the present curing procedure of 28 days.

15. *Cold Mix Additives*

Studies are continuing in the use of available additives in cold mixes to determine the necessary procedures and additives to give the best possible durable mix. This programme is being conducted in three stages, the first stage now being completed.

16. *Microviscometer*

With the acquisition of the Shell Microviscometer, a recently developed means of determining viscosity of asphalts in a wider range of temperatures, a study is under way to establish procedures of testing, its practical uses and its maximum value in viscosity evaluations.

17. Surface Treatment

An investigation was initiated to ascertain how the normal type of aggregates, when used for surface treatment of bituminous pavements, will react to Cationic and Anionic emulsions. It is claimed that Cationic emulsions are best applied with siliceous type aggregate, whereas Anionic emulsion should be used with a carbonaceous type.

18. Sibley Aggregates

Work was undertaken to analyse the suitability of Sibley type aggregate for use in highway construction and to establish the accuracy of using hardness as a means of differentiating between innocuous and detrimental Sibley Material.

19. Aranceous Carbonates

A study of aranceous carbonates which have shown evidence of poor performance is under way to evaluate their suitability for highway use.

Courses of Instruction

During the year 4 groups of Engineers-in-Training (16 engineers), underwent a period of 10 weeks with the Section during which time they studied and reviewed the work in the Materials and Research Section.

After working hours, for a period of 16 weeks, "An Introductory Course in Soil Mechanics" was given once each week to 50 Department employees of various Sections at Downsview.

Training schools for inspection staff and instrumentmen were again continued by senior personnel. In previous years full responsibility of all necessary arrangements was borne by this Section, but with administrative details now borne by the Training Committee, our staff was required to prepare lectures, presentation of descriptive films, laboratory and field demonstrations and preparation of examination papers. Following are the courses at which instruction was given showing the number of candidates in attendance and the percent who were successful in passing the examinations.

Course	Number in Attendance	Percent Successful
59-48 Concrete Inspectors — Advanced.....	27	66.6
Engrs. Assts. 3 to 5		
60-4 Asphalt Inspectors — Advanced.....	31	61.3
Engrs. Assts. 3 to 5		
60-12 Inspectors — Beginners.....	25	60.0
-13 Inspectors — Beginners.....	25	36.0
-14 Inspectors — Beginners.....	29	44.8
Engrs. Assts. 2 to 3		
60-5 Soils and Grade Inspectors — Advanced.....	27	66.6
Engrs. Assts. 3 to 5		
60-3 Instrumentman to Sr. Instrumentman.....	20	75.0
Engrs. Assts. 4 to 5		
60-6 Jr. Instrumentman to Instrumentman.....	22	*
60-7 Jr. Instrumentman to Instrumentman.....	22	*
Engr. Assts. 3 to 4		

* Instruction and examinations were given on concrete, asphalt and soils but pass or failure ratings were not finally assessed, this being but a portion of the course.

In addition to the above, instruction was given to Municipal employees on courses 60 22, 23 and 24, each of one week duration and dealing with all technical information related to Concrete, Soils and Grading, and Asphalt respectively.

A short school of instruction for personnel of Huntsville District was conducted by one of our Quality Control Inspectors attached to the North Bay Region. This course covered the subject matter on elementary aspects of concrete technology and inspection with emphasis on field quality control of concrete.

The following courses were also conducted for the junior laboratory technicians:

- (a) Introduction to Geology with Emphasis on Petrography.
- (b) Elementary Soil Mechanics and Testing Procedures.
- (c) Elements of Bituminous Technology and Bituminous Mix Design.
- (d) Elements of Concrete Technology.

Specifications

Specifications were initiated or reviewed and revised for the following:

- 1. Soil Cover Asphalt Emulsion.
- 2. Mixed Fertilizer.
- 3. Grass Seed.
- 4. Weed and Brush Killing Compounds.
- 5. Steel Beam Guide Rail.
- 6. Concrete Pipe.
- 7. Clay Pipe
- 8. Structural Concrete.

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1959-60

ROSS E. CLARKE, P.Eng., *Assistant Construction Engineer*

Very satisfactory progress was made in the construction of the Trans-Canada Highway across the Province. In particular there was very heavy concentration of work in the Ottawa, Sault Ste. Marie, White River, Fort William and Kenora Districts. The most important work carried out during the year was as follows:

The Ottawa Queensway is being constructed under an agreement of March 19, 1957, between Canada, Ontario, National Capital Commission, and the City of Ottawa.

On Stage 1 (east city limits to Hurdman's Bridge) and the eastern Trans-Canada Highway connection to Highway 17, placing granular and concrete paving was in progress, and four of six structures were completed.

On Stage 2 (west city limits to Carling Avenue Interchange), grading and culvert contracts are in progress and five of eight structures have been completed.

The western Trans-Canada Highway connection as far as Highway 15 is under construction.

On Highway 15, paving was completed from Perth to Drummond Centre and on the Innisville By-pass. The C.P.R. overpass and the Mississippi River bridge on the Carleton Place By-pass were opened to traffic with paving scheduled for 1960.

The C.P.R. overhead on the Peterborough By-pass and the Jackson's Creek bridge on Highway 133 were completed, as was the steel superstructure on the 1,000-foot bridge over the Otonabee River.

On Highway 103 the bridges on the Port Severn By-pass were completed.

Work on Highway 69 continued, with base course pavement laid from Nobel to Pointe-au-Baril. The rebuilt section from the Shawanaga River north for 8½ miles was paved. Bridges over the Moon and Shawanaga Rivers were completed. The bridge over the Magnetawan and the 60-foot arch culvert over the Harris River were also finished.

On Highway 17, in the Sudbury area, reconstruction was started on the section between the Vermilion River and Whitefish.

On Highway 17, in the Sault Ste. Marie area, the Thessalon By-pass and the Sauble and Blind River structures and approaches were paved. Grading and granular base operations were under way from Sault Ste. Marie north for 24 miles.

This year saw the breakthrough in the "Gap" area between Marathon and the Agawa River. Grading has been mainly completed except for a ten-mile stretch north of Wawa. All the contracts were well roughed out and most of the detours eliminated.

Paving was completed from Rouse Lake to Marathon.

In the Marathon to Nipigon section of Highway 17, 9 miles of base pavement were laid from Terrace Bay westerly; heavy rock grading in the Cavers Hill area

was completed, and the two bridges at Pays Platt and an overhead at Rossport were opened to traffic. Grading and granular base work were in progress on a 20-mile stretch east of Nipigon.

The grading contract from Nipigon to Red Rock Corners was paved. Considerable progress was made on grading contracts between Red Rock Corners and Amethyst Station Road, with the section from 10 miles south of Red Rock to the Coldwater Creek completed.

The bridge over the Wolfe River was completed and work is in progress on an overhead at Ouimet and the bridge over the Pic River.

West of Fort William the major grading contract from 7.5 miles west of Shabaqua to Raith was completed and good progress made on a new contract westerly from Raith.

In the Kenora area, work continued on Highway 17 with a 15-mile stretch east of Borup's Corners and a section 5 miles east and 5 miles west of Highway 105 paved. Another 12½ miles were paved from 6 miles east of the Manitoba boundary easterly.

Grading contracts in progress during the year covered 17 miles from Ignace westerly, and 30 miles through extremely rough terrain from Longbow Corners to Vermilion Bay.

The Winnipeg River bridge at Kenora was opened to traffic.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and Culverts.....	901.74 miles
Bituminous Hot Mix Pavement.....	635.26 miles
Permanent Bridges and Structures built.....	108

Grading and Culverts

District	T.C.H. Hwy.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	Mississippi River Bridge at Innisville.....	1.06	.....	1.06
	15	Mississippi River Bridge to Carleton Place By-pass.....	.15	.....	.15
	17	St. Laurent Blvd. to east of Green's Creek....	3.57	.....	3.57
	15	C.P.R. Overhead to Carleton Place By-pass..	.08	.....	.08
	17	Montreal Road, Ottawa East.....	.50	.....	.50
	15	Carleton Place By-pass.....	2.48	.....	2.48
	17	"B" East city limits to 0.6 mi. east of Green's Creek.....	4.40	.....	.01
	15 & 17	Interchange.....	.80	.....	.01
	Q'way	Carling Ave. Interchange.....	.76	.....	.76
	Q'way	Nicholas St. Extension.....	.60	.....	.60
	Q'way	Hare Avenue to West city limits.....	2.20	.....	2.20
	Q'way	Hare Avenue N.E. 1.3 miles under structure.	1.30	.....	1.20
	Q'way	Bridge No. 31, Alta Vista Drive.....	.06	.....	.06
	Q'way	Hurdman's Bridge to St. Laurent Blvd.....	1.70	.....	1.70
	Q'way	"A" Rideau River to East city limits.....	1.30	.....	.78
Kingston		Nil.			
Port Hope	133	Jct. Hwy. 28 and Hwy. 133 north.....	2.07	.....	2.07
	7	C.P.R. Overhead, Peterborough By-pass.....	.81	.....	.74
	133	Jackson's Creek to Hwy. 7.....	3.50	.....	3.30
	7 & 15	Peterborough By-pass.....	6.20	.....	2.53
	12	Revision at Gamebridge.....	1.33	.....	1.10

Grading and Culverts

District	T.C.H. Hwy.		Total Miles	Compl. Previous Years	Compl. This Year
Sudbury	17	Vermilion River to Whitefish.....	1.96	.....	.50
	69	Magnetawan River Bridge and approaches....	.61	.35	.26
	69	Magnetawan River to Pointe-au-Baril.....	12.32	3.80	.20
Sault Ste. Marie	17	Sault Ste. Marie to Odena.....	3.88	.....	2.40
	17	Odena to Heyden.....	5.37	.....	2.50
	17	Heyden to Goulais River.....	6.77	.....	6.40
	17	Goulais River to Havilland Bay.....	7.86	.....	7.50
	17	Au Sable River Bridge.....	.60	.30	.30
White River	17	18.4 mi. east of White River southerly.....	10.00	7.00	3.00
	17	29 mi. north of Wawa southerly.....	10.00	7.00	3.00
	17	19.1 mi. north of Wawa southerly.....	9.10	3.00	6.10
	17	Michipicoten River southerly.....	6.00	5.50	.50
	17	6 mi. south of Michipicoten River southerly..	7.00	.....	5.50
	17	2 mi. south of Old Woman River southerly....	10.30	.....	9.00
Fort William	17	25 mi. north of Agawa River southerly.....	10.00	9.00	1.00
	17	(1.75 mi. west of Cavers) Cavers Hill to Pays Platt.....	8.00	3.80	3.60
	17	(7.5 mi. north junction Hwy. 130) Raith southerly.....	10.10	4.50	5.60
	17	Coldwater Creek northerly (to Moose Lodge)..	5.70	4.60	1.10
	17	Ouimet to Coldwater Creek.....	5.25	1.40	3.85
	17	(Rossport) Selim Diversion to Pays Platt.....	7.60	.60	7.00
	17	Jackfish Lake to Terrace Bay.....	17.64	.....	16.00
	17	Raith to Poland.....	9.35	.....	3.30
	17	Amethyst Road to Loon Lake Road.....	8.65	.....	6.20
	17	Pearl River to Loon Lake Road.....	5.20	.....	3.70
	17	Ouimet to Pearl River.....	6.50	.....	1.50
	17	Nipigon River Bridge easterly.....	10.40	.....	7.00
	17	10 mi. east of Nipigon easterly.....	9.73	.....	1.40
	17	6.1 mi. east of Manitoba B'dy easterly.....	6.10	5.00	1.10
	17	12.2 mi. east of Manitoba B'dy easterly.....	6.20	.....	5.00
	17	Approaches to Winnipeg River Bridge (East Bridge).....	.50	.....	.50
	17	5 mi. west of Hwy. 105 westerly to 1.5 mi....	11.10	.....	7.00
Kenora	17	2.5 mi. west of Raleigh east of Butler.....	9.93	3.00	6.93
	17	Ignace to 1.5 mi. east of Borup's Corners.....	7.42	.....	1.00
TOTALS.....			282.01	58.85	154.84

Bituminous Hot Mix

District	T.C.H. Hwy.		Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	15	Innisville By-pass.....	1.06	.....	1.06
	15	Perth to Drummond.....	7.80	.....	7.80
	Q'way	Nicholas St. Extension.....	.60	.....	.60
	Q'way	Rideau River to East city limits.....	1.30	.....	.16
Port Hope	133	Jct. Hwy. 28 to Jackson's Creek.....	2.07	.....	2.07
Sault Ste. Marie	17	Thessalon By-pass.....	3.26	.....	3.26
	17	Au Sable River Bridge.....	.60	.....	.60
	17	Blind River Bridge.....	.20	.....	.20
White River	17	Rouse Lake to White Lake Narrows.....	18.92	.....	18.92
	17	11.7 mi. west of White River easterly.....	19.20	3.00	16.20
Fort William	17	Red Rock Corners to Nipigon River Bridge....	7.20	.....	7.20
	17	Black Sturgeon River Bridge and approaches	.60	.....	.60
	17	Steel River Bridge and approaches.....	.27	.....	.27
	17	Prairie River Bridge and approaches.....	.16	.....	.16
	17	Marathon Road easterly.....	16.90	14.65	2.25
Kenora	17	6.1 mi. east of Manitoba Bdry. easterly.....	12.54	.....	12.54
	17	5 mi. east of Hwy. 105 westerly.....	10.00	.....	10.00
	17	Eagle River Bridge approaches.....	.25	.....	.25
	17	2 mi. east of Borup's Corners, easterly.....	15.15	.....	15.15
TOTALS.....			118.08	17.65	99.29

Granular Base (New Grading)

Ottawa	15	Mississippi River Bridge at Innisville.....	1.06	.....	1.06
	15	Mississippi River Bridge to Carleton Place By-pass.....	.15	.....	.15
	15	C.P.R. Overhead to Carleton Place By-pass..	.08	.....	.08
	17	Montreal Road, Ottawa east.....	.50	.....	.50
	15	Carleton Place By-pass.....	2.48	.....	2.48
	17	Ottawa East city limits to .06 mi. east of Green's Creek.....	4.40	.....	.15
	15 & 17	Interchange.....	.80	.....	.19
	Q'way	Carling Avenue Interchange.....	.76	.....	.76
	Q'way	Nicholas St. Extension.....	.60	.....	.60
	Q'way	Hare Avenue to West city limits.....	2.20	.....	1.20
	Q'way	Hare Avenue, northeast 1.3 miles.....	1.30	.....	.72
	Q'way	Hurdman's Bridge to St. Laurent Blvd.....	1.70	.....	1.70
	Q'way	Rideau River to East city limits.....	1.30	.....	.87
Port Hope	133	Jct. Hwys. 28 and 133, to Jackson's Creek....	1.25	.....	1.25
	7	C.P.R. Overhead at Peterborough By-pass....	.81	.....	.81
	133	Jackson's Creek to Hwy. 7.....	3.50	.....	1.92
Huntsville	12	Coldwater By-pass.....	13.80	.....	11.59
	69	Nobel to Pointe-au-Baril.....	18.34	.....	11.00
Sudbury	17	Vermilion River to Whitefish.....	1.96	.....	.50
	69	Magnetawan River Bridge and approaches....	.61	.35	.26
	69	Magnetawan River to Pointe-au-Baril.....	12.32	3.80	.20
Sault Ste. Marie	17	Sault Ste. Marie to Odena.....	3.88	.....	2.40
	17	Odena to Heyden.....	5.37	.....	2.50
	17	Heyden to Goulais River.....	6.77	.....	6.40
	17	Au Sable River Bridge.....	.60	.....	.06
	17	Goulais River to Havilland Bay.....	7.86	.....	7.50
White River	17	21.8 mi. east of Marathon easterly.....	12.00	3.00	9.00
	17	18.4 mi. east of White River easterly.....	10.00	3.00	7.00
	17	Michipicoten River southerly.....	6.00	.....	6.00
	17	6 mi. south of Michipicoten River southerly..	7.00	.....	4.50
	17	2 mi. south of Old Woman Bay southerly.....	10.30	.....	.50
Fort William	17	25 mi. north of Agawa River southerly.....	10.00	4.50	5.50
	17	Cavers to Pays Platt.....	8.00	.....	5.00
	17	7.5 mi. north of Jct. Hwy. 120 to Raith.....	10.10	1.10	9.00
	17	Coldwater Creek to 10 mi. south of Red Rock	5.70	3.80	1.90
	17	Ouimet to Coldwater.....	5.25	.30	4.95
	17	Amethyst Road to Loon Lake Road.....	8.65	.....	7.50
	17	Selim Hill to Pays Platt.....	7.60	1.50	6.10
	17	Jackfish Lake to Terrace Bay.....	17.64	.....	16.00
	17	Ouimet Overhead.....	.06	.....	.04
	17	East end Nipigon Bridge easterly.....	10.40	.....	6.00
	17	Loon Lake Road to Pearl River.....	5.20	.....	2.60
	17	Pearl River to Ouimet.....	6.50	.....	2.30
	17	Raith to Poland.....	9.35	.....	2.10
	17	Red Rock Corners to Nipigon Bridge.....	7.31	.....	7.31
Kenora	17	6.1 mi. east of Manitoba Bdry. easterly.....	6.10	1.50	4.60
	17	12.2 mi. east of Manitoba Bdry. easterly.....	6.20	.....	4.20
	17	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	9.93	2.00	7.93
	17	Ignace to 1.5 mi. east of Butler.....	7.42	.....	.50
TOTALS.....			281.11	24.85	177.38

New Bridges

District	T.C.H. Hwy.	Location
Ottawa	Q'way	Carling Avenue, westbound
	Q'way	Carling Avenue, eastbound
	Q'way	Kirkwood Avenue
	Q'way	Pinecrest Avenue
	Q'way	Clyde Avenue
	Q'way	Tremblay Road
	Q'way	St. Laurent Blvd.
	Q'way	Avenue "M", Ottawa
	Q'way	Alta Vista Drive
	15	Mississippi River Bridge, Carleton Place By-pass
	15	C.P.R. Overhead, Carleton Place By-pass
	17	Montreal Road, Ottawa East
Port Hope	133	Jackson's Creek
	7	C.P.R. Overhead, Peterborough By-pass
Huntsville	69	Shawanaga River
	69	Briar Creek
	103	Severn River
	103	Severn River Overflow Bridge
	103	Severn River Boat Channel
	103	Moon River
Sudbury	69	Magnetawan River
	69	Harris River
White River	17	Wabikoba Creek
	17	Bertrand Creek
	17	White River, west crossing
	17	Catfish Creek No. 2
	17	Catfish Creek No. 1
	17	A.C.R. Overhead, 2.5 mi. west of Wawa
	17	Magpie River
	17	Michipicoten River
	17	Baldhead River No. 2
	17	Baldhead River No. 1
	17	Coldwater River
	17	Barrett River
Fort William	17	Wolf River
	17	Rosspoint Overpass
Kenora	17	Winnipeg River, east branch

Total of 37 New Bridges

THE ELECTRONIC SECTION, DATA PROCESSING

During the fiscal year 1959-60 the Electronic Section was placed under the Administration Branch with the Chief of Administration, A. T. C. McNab, responsible for the development of this relatively new group. The year was one of decision and growth in several major directions, not the least of which was emphasis on adequate salary scales for programming to ensure a staff capable of handling the many problems which are assigned. Once the salary stabilization had occurred the problem of selecting good potential programming staff was easily handled and at the date of writing a strong team of mathematicians, engineers and accountants is now available for consultation on all phases of highway work. Problems have been tackled successfully in all the major branches and the uses for the computer and the associated data processing equipment seem to be inexhaustible.

A major study of existing applications was undertaken by a team of consultants

from the United States. The report which they submitted laid down broad avenues for development and gave details on the data processing equipment which would be necessary to carry out the plan.

As a result of the report a new memory of 4,000 words capacity was ordered, along with magnetic tapes and high-speed input-output units.

This new equipment is expected to speed up many calculations and in addition provide the additional capacity within the "memory" to permit the handling of large volume problems. Plans were laid for moving to the Administration Building into the space provided for the data processing group. At the time of moving there will be an amalgamation of the Accounting Data Processing with the Electronic Section. All applications of data processing nature will then be handled by the single organization. This amalgamation is expected to produce better service at reduced cost.

MINING, ACCESS AND RESOURCES ROADS REPORT, 1959-60**ROSS E. CLARKE, P.Eng., Secretary*****Mining and Access Roads Committee (Interdepartmental)***

The Mining and Access Roads Committee consisted of the Provincial Treasurer as Chairman; Minister, Department of Highways; Minister, Department of Mines; Minister, Department of Lands and Forests, and Minister of Reform Institutions. This Committee administered the fund which was voted by Legislature in the Department of Mines estimates.

Resources Roads construction, started the previous year, was continued, with the formal agreement between the Federal Government and the Province of Ontario being signed December 22, 1959. This agreement proposes an expenditure in northern and northwestern Ontario by March 31, 1967 of \$15,000,000. The Federal Government will pay one-half the construction costs except where a private business enterprise benefits directly, and here the cost will be shared between the two Governments and the company concerned. The Department of Highways will design and supervise construction of the work.

The following was accomplished this year:

New Liskeard District:

Resources Road — Foleyet West — 30 miles

An Equipment Rental Contract 59-140 was let in the spring of 1959 and construction was started on 10 miles of grading in July, 1959. This 10 miles of road, including two double 6' x 6' Creosoted Timber Culverts, was completed in September. Clearing was started in December 1959 from mileage 16 to mileage 26.

In January 1960, construction of a "Glulam" Timber Bridge across the Ivanhoe River at Foleyet was commenced. It is expected that this bridge will be completed by the summer of 1960.

Sault Ste. Marie District:

Resources Road — Chapleau East — 30 Miles

Grading, culverts and granular borrow was completed on 8.5 miles of a 12-mile Equipment Rental Contract, southeast of Chapleau on the Chapleau Foleyet Road. Clearing was also completed and a tote road constructed over the remaining 3.5 miles before construction work closed down on December 15, 1959, to be resumed next spring.

Additional to the above a further 10 miles was cleared by day labour forces during the winter of 1959-60.

An unusually wet season greatly impeded the progress of the rental contract 59-181.

Fort William District:

Resources Road — Nakina to Cavell and Terrier Lake — approximately 47 miles.

Anaconda Iron Ore (Ontario) Limited is contributing towards construction costs on the section Cavell to Terrier Lake, 35 miles.

Construction started May 1959 under Equipment Rental Contract let by Anaconda Iron Ore (Ontario) Limited. Construction of this road was carried out chiefly by bulldozer and large scrapers until freeze-up when gravelling was continued by shovel and trucks.

Wet weather and frozen ground delayed operations considerably during the latter part of May and the first half of June but by mid-November an 18-foot gravelled roadway was open to traffic from Cavell to Terrier Lake, a distance of 34 miles, and a 24-foot roadway from Secondary Highway 584 to Cavell, a distance of 13 miles.

During the winter of 1959-60 this 34-mile section from Cavell to Terrier Lake was widened to 24 feet. A creosote timber bridge on piles was built over Lucy Creek at Mileage 6, span 15 feet and roadway width 24 feet. A steel and concrete bridge over the Kowashkagama River at Mileage 17.5 was designed for maximum economy and speedy erection. The span of this bridge is 80 feet and roadway width 24 feet. The main girders were prefabricated in pairs in convenient lengths for transportation. The first pair of assembled girders was launched by counterbalancing with the second. The second was launched over the first and moved sideways into place. This bridge is designed to take 50-ton loads.

Resources Road — Spruce River Road — Highway 17 (East of Port Arthur) to Cheeseman Lake — approximately 75 miles.

Construction costs being shared by Abitibi Power & Paper Co.

SECTION No. 1 — Highway 17 to 30 miles north.

The contract for construction of this section was let by Abitibi Power & Paper Company Limited and construction started March 1959. Considerable more rock was encountered than anticipated and borrow material was mostly boulder till trapped behind rock ridges. From Mileage 20 to 30 the contractor built a winter road with a minimum of material to allow Abitibi to haul out 23,500 cords of pulpwood. This was part of Abitibi's contract with the contractor.

SECTION No. 2 — 30 miles north of Highway 17 to 26 miles northerly.

Contract 59-286, an Equipment Rental Contract, was let by the Ontario Department of Highways for the construction of this section. Starting November 16, 1959, clearing and grubbing only was carried out during the winter with actual road construction to start on May 2, 1960. The first 8 miles of this contract follows an existing road previously built by Abitibi but heavy rock cutting is required to meet Resources Roads standards.

Resources Road — Savant Lake (599) South to Highway 17 — approximately 90 miles.

Ontario Department of Highways Equipment Rental Contract 59-259 let for construction of first 15-mile section from Savant Lake to Sturgeon River. Construction started September 21, 1959. A right-of-way was located and cleared approximately 80 feet wide by the Department of Lands and Forests during the winter of 1958-59. However, considerable amount of revising of the line was required to construct to Resources Roads standards. The new construction commenced $2\frac{1}{2}$ miles south of Savant Lake with the existing narrow road being rebuilt from Savant Lake southerly. Work on the contract was suspended on December 15, 1959, and clearing and rock drilling only resumed on February 15, 1960, with full work to resume June 1, 1960.

Mining Road — Kowkash to Jeffries Lake Road — 6 miles.

Costs being shared between the Province and Mining Company.

Ontario Department of Highways Equipment Rental Contract 59-281 for construction started October 8, 1959. Can-For Mines located this road and supplied field supervision of construction. Construction was fairly easy as the terrain is flat, and gravel deposits are located at each end of the road. The road was open to traffic by December 1, 1959. At Johnson Creek, Mileage 2, two structural plate pipe arch culverts 9'6" span by 6'5" rise were installed instead of a bridge as originally planned.

Kenora District:*Resources Road — Minaki South — 15 miles.*

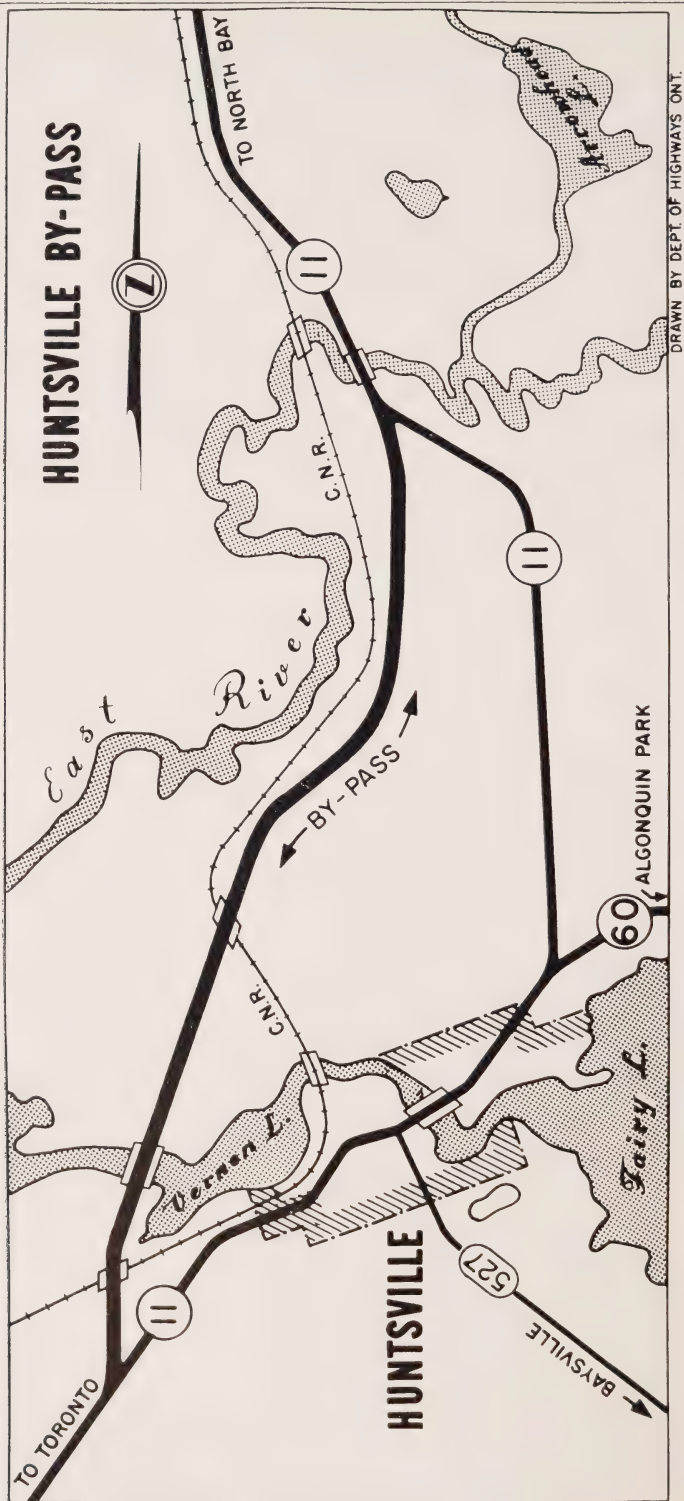
Work was carried out under a Department of Highways Equipment Rental Contract, No. 59-164. This contract will be completed in 1960. The right-of-way clearing on this contract was done by day labour forces during the 1959 winter months and the contractor began grading operations on approximately September 15, 1959, suspending operations on December 15, 1959. In March, clearing and rock drilling only was resumed, with full work to resume June 1, 1960.

Resources Roads, 1959-60**Financed Partially by the Province**

District	Location	Year Begun	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Miles to Compl.
New Liskeard	Foleyet west.....	1958	30.0	.....	10.0	20.0
Sault Ste. Marie	Chapleau east..... (Foleyet-Chapleau — 60 miles)	1958	30.0	.....	8.5	21.5
Fort William	Nakina to Terrier Lake.....	1959	47.0	.....	45.0	2.0
	Hwy. 17 to Cheeseman Lake.....	1959	75.0	.....	20.0	55.0
	Savant Lake to Hwy. 17....	1959	90.0	.....	4.0	86.0
Kenora	Minaki south.....	1959	15.0	.....	4.0	11.0
TOTALS.....			287.0	.....	91.5	195.5

Mining and Access Roads, 1959-60**Financed Partially by the Province**

Fort William	Kowkash to Can-For Mine.....	1959	6.0	6.0	...
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Sketch showing the Huntsville By-pass which was officially opened November 27, 1959.

DISTRICT No. 1 — CHATHAM**G. U. HOWELL, P.Eng., District Engineer****Construction**

Highway 98 between Charing Cross and Merlin was completed, putting the road from Blenheim to Windsor in good repair. Considerable trouble was experienced with drainage on this stretch. The north lane of Highway 402 in Sarnia was completed and the south lane reconstructed. A small diversion on Highway 18 improved the north entrance to Amherstburg. Work was begun on the Tilbury By-pass of Highway 401. Six new rigid frame bridges were opened to traffic on Highway 40 between Chatham and Wallaceburg. These bridges are part of the reconstruction of this highway from Chatham to 11.9 miles north of Chatham.

Maintenance

Last winter our heaviest snowfall occurred in March. During that month nearly as much salt was used as during the preceding four months.

Sectional hot mix patching was carried out in 3 contracts under Maintenance Supervision, with considerable cold mix patching by patrols. Crack filling by contract was done on Highway 401 between Comber and St. Joachim. The centre joint was cleaned of old asphalt by a special power saw and then refilled with new material.

Two lighting contracts under the supervision of District Maintenance personnel were completed on Highways 401, 98, and 3 in the Windsor area.

Two weigh scales were installed, one on Highway 7 some 19 miles east of Sarnia; the other about 8 miles west of Blenheim on Highway 3.



Amherstburg Diversion on Highway 18. Contract 58-242, Chatham District.



Resurfacing on Highway 39 east of Tecumseh. Contract 59-162, Chatham District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
2	Kent-Middlesex Boundary to Thamesville....	7.30	1959	.....	5.00
7	1.75 mi. east junction 7 and 82 to Arkona.....	6.70	1959	.....	1.00
18	Amherstburg Diversion.....	1.10	1958	.....	1.10
40	Chatham to 11.93 mi. north.....	11.93	1959	.....	5.00
98	Charing Cross to Merlin.....	9.60	1958	3.00	6.60
402	Hwy. 7 to Canada Customs — Sarnia.....	3.30	1959	.....	3.30
TOTALS.....		39.93		3.00	22.00

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
2	Kent-Middlesex Boundary to Thamesville.....	7.30	1959	.....	5.00	31,053
18	Amherstburg Diversion.....	1.10	1958	.....	1.10	26,319
40	Chatham to 11.93 mi. north.....	10.40	1959	.....	5.00	153,653
98	Charing Cross to Merlin.....	9.60	1958	3.00	6.60	86,280
402	Hwy. 7 to Canada Customs — Sarnia.....	3.30	1959	.....	3.30	108,637
TOTALS.....		31.70		3.00	21.00	405,942

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
39	Tecumseh to Puce.....	6.15	6,704
98	Charing Cross to Merlin.....	9.60	12,756
402	Hwy. 7 to Canada Customs — Sarnia.....	3.30	7,479
TOTALS.....		19.05	26,939



Bridge construction north of Chatham on Highway 40. Contract 59-98, Chatham District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
2	Chatham: east to Louisville; west to Merlin T.L.....	13.0	7,200
3	Wheatley to Blenheim.....	3.3	1,750
7	Jct. Hwys. 7 and 22 to Arkona.....	1.5	1,425
18	Harrow to Leamington.....	4.0	1,580
21	Thamesville to Dresden.....	12.0	8,200
79	Bothwell to Alvinston.....	12.0	8,200
TOTALS.....		45.8	28,355

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
18	Amherstburg Diversion.....	1.10	1958	.....	1.10	3,030
40	Chatham to 11.93 mi. north.....	11.93	1959	.....	.....	10,733
98	Charing Cross to Merlin.....	9.60	1958	.....	9.60	26,601
402	Highway 7 to Canada Customs —Sarnia.....	3.30	1959	.....	3.30	25,181
TOTALS.....		.....	.....	.....	14.00	65,545

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
701	Pelee Island Road.....	6	21,125	1,300



Section of Highway 402 near Sarnia. Contract 59-125, Chatham District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
2	Louisville to 4 mi. west of Chatham.....	3.00	3,095
3	Wheatley to Blenheim.....	3.30	3,306
7	Junction Hwys. 7 and 22 to Arkona.....	1.50	1,498
18	Harrow to Leamington.....	4.00	4,002
39	Tecumseh to Puce.....	6.15	14,708
82	Jct. Hwys. 7 and 82 to Jct. Hwys. 82 and 21.....	5.64	9,674
TOTALS.....		23.59	36,283

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl. 1959-60	Tons Placed 1959-60
40	Chatham to Wallaceburg*.....	.....	385
	Patrols*.....	.....	735
TOTAL.....			1,120

* Various Locations

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used	Tons Chips Used
3	Elgin County Line to Howard-Oxford Township Line.....	6.7	26,003	995

Bridges Built

Hwy. No.	Location	Work Begun	Opened to Traffic	Type of Structure
40	Big Creek, Twps. Dover and Chatham.....	1959	Jan. 1960	Rigid Frame
40	Big Creek, Twps. Dover and Chatham.....	1959	Jan. 1960	Rigid Frame
40	Big Creek, Twps. Dover and Chatham.....	1959	Jan. 1960	Rigid Frame
40	Big Creek, Twps. Dover and Chatham.....	1959	Dec. 1959	Rigid Frame
40	Bear Creek, Twps. Dover and Chatham.....	1959	Feb. 1960	Rigid Frame
40	Maxwell Creek, Twps. Dover and Chatham.....	1959	Dec. 1959	Rigid Frame

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Lot No.	Con. No.	Flash. Lights Bell	Short Arm Bell
2	C.N.R.	Kent County, Raleigh Twp.....	17	5		X
39	C.P.R.	Essex County, Rochester Twp.....	3	1	X	
402	C.N.R.	Lambton County, Sarnia Twp.....	17	7	X	

New Buildings

Hwy. No.	Location	Type	Begun	Completed
Patrol Offices:				
	Comber.....	16' x 24' Portable	1959	1959
	Pike Creek.....	16' x 24' Portable	1960	1960
	Alvinston.....	16' x 24' Portable	1959	1959
	Thedford.....	16' x 24' Portable	1959	1960
	Petrolia.....	16' x 24' Portable	1960	1960
	Blenheim.....	16' x 24' Portable	1960	1960
Salt Sheds:				
	Cottam.....	36' x 28' Portable	1959	1959
	Blenheim.....	36' x 28' Portable	1959	1959
	Reeces Corners.....	36' x 28' Portable	1959	1959
	Warwick.....	36' x 28' Portable	1959	1959
Weigh Scale:				
	Hwy. 3 — 1 mile east of Eatonville.....	20' x 14' Brick	1959	1960
	Hwy. 7 — 1 mile west of Jct. Hwys. 7 and 21.....	20' x 14' Brick	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	29	Shoulders
Off-road parks maintained.....	6		
Roads snowploughed and kept open, King's Highways.....	.....		635
Roadside picnic places maintained.....	90		
Routine maintenance, King's Highways.....	.....		635
Salt for de-icing roads (raw).....	.....	5,800	635
Salt in sand, stockpiled.....	.....	333	
Sand for winter maintenance.....	.....	2,447	
Scale houses maintained.....	3		
Seeding by department's forces.....(sq. yds.)	948,000		
Shrubs received and planted this year.....	2,496		
Signs erected or replaced.....	3,794		
Snow fence erected, dismantled, stored.....	.....		39
Snow hedges planted this year.....	.....	
Traffic lights installed this year.....	1		
Weed control.....	.....		29
Zone painting on King's Highways.....	.....		605
Zone painting on secondary highways.....	.....	

DISTRICT No. 2 — LONDON**W. L. FRASER, P.Eng., District Engineer****Construction**

Completion of three structures: Delaware, on Highway 2; Oxbow Creek, Highway 22; and Medway River, on Highway 22, eliminated three hazardous traffic problems. Two underpasses were completed on Highway 401 between Tempo and Eastwood, at the Norwich Road and White Oak Sideroad, closing off two level crossings.

Construction complete, including granular, culverts and pavement, on Highway 22 westerly from its intersection with Highway 4, a total of 6.11 miles; Highway 135 from junction of Highway 2 east of Lambeth at the intersection with Highway 401, 3.2 miles; Highways 7 and 81 at Parkhill, 3 miles; and the paving of a previous granular contract from Tillsonburg to Mt. Elgin on Highway 19, 6.5 miles. Highway 76 from Highway 3 to West Lorne and Highway 81 from Highway 2 to Mount Brydges. Paving and general improvement through the Village of Vienna on Highway 19, and the Village of Ailsa Craig on Highway 7. Resurfacing on Highways 75 and 77, now reverted to the County of Elgin.

Major reconstruction was carried out on three connecting links: Town of Tillsonburg, Town of Ingersoll, City of Brantford.

Grading, culverts and paving contracts reached peak progress on Highway 3, Tillsonburg to Aylmer, and on Highway 3, at St. Thomas west entrance, where two structures were completed over the Dodd's Creek and one over Kettle Creek. Grading and structures on Highway 401, Woodstock East to Preston, approximately 20 miles, progressing favourably. Grading to be completed during 1960-61 programme.



Bridge construction on Highway 2 at the Village of Delaware. Contract 58-266, London District.



Grading operations on Highway 3 near Tillsonburg. Contract 58-63, London District.

Maintenance

Routine maintenance operations carried out on the District in 1959-60. Surface treatment, on a limited scale, gave good results.

Two weigh scales on Highway 401 opened early in 1960.

The District experienced several serious blizzards during the latter part of February and early March. Damage to paved surfaces, resulting from the Spring break-up, was the worst in many years.

Arboricultural operations included approximately 2,000,000 square yards of seeding, the planting of over 7,200 trees and shrubs and 5.1 miles of snow hedge. Extensive clearing operations were carried out on Highway 24, north of Brantford, and on 401 west of Highway 4 in advance of contracts to be called in the fiscal year 1960-61. Approximately 50 winter relief men hired for the above work.

North of Brantford, the department's tree-saver was used to relocate about 30 trees, and to transplant 170 averaging 10 feet in height, from the Delaware Nursery, to the Highway 401 and Wellington Road interchange. Due to severe winter conditions, relief work on roadside parks was restricted until the latter part of March, when 10 men were employed on planting, drainage, brushing, etc.

Illumination was installed at the following locations: junction of Highway 135 and Highways 2 and 4; the southeast quadrant of Highway 401 and Highway 2 interchange; junction of Highways 4 and 22.

Fully actuated traffic signals installed at the junction of Highways 4 and 22, and flashers erected at east end of Highway 401 at Eastwood. Illumination and installation of signals was begun at the junction of Highway 135 and Wellington Road.

Two salt sheds and six engineering field offices were built and wired by District forces. Over 5,000 new signs erected in the District with emphasis placed on free-way and channelization signing. Some 620 miles of zone painting were completed.



Construction of culverts on Highway 3 near Tillsonburg. Contract 58-63, London District.

Grading and Culverts

Hwy. No.	Location	Miles in Project	Work Begun	Compl. Previous Years	Miles Compl. 1959-60
2	White Oak Sideroad 6 miles south of London	1.2	1959	.....	1.2
3	Tillsonburg westerly to Malahide Township Line.....	9.3	1959	.....	5.3
3, 4	St. Thomas west entrance including 3 structures; Kettle Creek, Dodd's Creek.....	1.2	1959	.....	1.01
7	Ailsa Craig.....	0.87	1959	.....	0.87
7, 81	North through Parkhill.....	1.0	1958	.....	1.0
19	Village of Vienna.....	0.2	1959	.....	0.2
22, 4	Calamity Corners.....	0.87	1958	.....	0.87
135	Wellington Road to Hwy. 401 interchange....	2	1959	.....	2
401	Between Lots 4 and 5, Oxford West, structure.....	0.33	1958	.....	0.33
TOTALS.....		16.97		.....	12.78

Granular Base on New Grading

Hwy. No.	Location	Miles in Project	Work Begun	Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
2	Delaware to west of Thames River.....	2.4	1958	.....	2.4	86,301
7	Ailsa Craig.....	0.87	1959	.....	0.87	28,161
7, 81	No. 7 north through Parkhill.....	1.0	1958	.....	1.0	35,015
19	Tillsonburg to Mt. Elgin.....	7.4	1958	3.18	4.22	7,605
19	Village of Vienna.....	0.2	1959	.....	0.2	226
22, 4	Calamity Corners.....	0.87	1958	.....	0.87	44,085
22	Calamity Corners to Lobo.....	6.11	1958	5.01	1.10	49,915
135	Wellington Road to Hwys. 2, 4....	3.02	1958	2.87	0.15	2,018
135	Wellington Road to 401 interchange.....	2	1959	.....	2	39,048
401	Between lots 4 and 5, Oxford West, structure.....	0.33	1958	.....	0.33	19,290
401	White Oak Sideroad, 6 miles south of London.....	0.68	1959	.....	0.68	22,403
TOTALS.....		24.88		11.06	13.82	334,067

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Total Tons Placed 1959-60
2	Delaware to west of Thames River.....	2.4	5,370
7	West Junction of 81 and 7 easterly.....	1.16	860
7	Ailsa Craig.....	0.87	1,021
7, 81	No. 7 north through Parkhill.....	1.0	3,189
19	Tillsonburg to Mt. Elgin.....	7.4	16,246
22	Calamity Corners to Lobo.....	6.11	27,943
22	Medway River Bridge.....	0.45	900
22, 4	Calamity Corners.....	0.87	2,268
24	Simcoe to 1.2 miles north of Waterford.....	8.98	8,167
75, 76, 77	Hwy. 3 to Dutton; to West Lorne; to Rodney.....	11.7	10,680
81	Delaware to Mt. Brydges.....	4.8	1,001
135	Wellington Road to Highway 401 interchange.....	2	2,991
135	Wellington Road to Highways 2 and 4.....	.75	2,394
401	Between Lots 4 and 5, Oxford West, structure.....	0.33	586
401	White Oak Sideroad 6 miles south of London.....	0.68	730
TOTALS.....		49.50	84,346

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
76	3 miles north of West Lorne to Thames River.....	3.5	2,000
80	Walkers Corners to Alvinston.....	5.4	4,000
81	Highway 22 to Highway 7.....	14.0	10,000
	Miscellaneous in District 2 — shoulders, etc.....		23,994
TOTALS.....		22.9	39,994

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Years	Miles 1959-60	Tons 1959-60
2	Delaware to west of Thames River.....	2.4	1958	.....	2.4	10,893
2	White Oak Sideroad 6 miles south of London.....	1.2	1959	.....	1.2	2,194
7	Ailsa Craig.....	0.87	1959	.....	0.87	3,438
7, 81	No. 7 north through Parkhill..	1.0	1958	.....	1.0	6,903
19	Village of Vienna.....	0.2	1959	.....	0.2	449
19	Tillsonburg to Mt. Elgin.....	7.4	1958	.....	7.4	28,360
22	Calamity Corners to Lobo.....	6.11	1958	.....	6.11	20,923
22, 4	Calamity Corners.....	0.87	1958	.....	0.87	4,150
22	Medway River Bridge.....	.45	1958	.....	.45	2,009
135	Wellington Road to Highway 401 interchange.....	2	1959	.....	2	8,689
135	Wellington Road to Highways 2 and 4.....	3.02	1958	.....	3.02	10,849
401	Between Lots 4 and 5 West Oxford structure.....	0.33	1958	.....	0.33	1,036
TOTALS.....		25.85			25.85	99,893

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
76	3 miles north of West Lorne to Thames River.....	3.5	10,513	271.6
80	Walkers Corners to Alvinston.....	5.4	16,056	434.0
81	Highway 22 to Highway 7.....	14.0	41,634	1,134.58
TOTALS.....		22.9	68,203	1,840.18



Bridge construction on Highway 2 near the Village of Delaware. Contract 58-266, London District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
7	West Junction of Highways 81 and 7 easterly.....	1.16	2,223.02
24	Simcoe to 1.2 miles north of Waterford.....	8.98	22,041.01
75, 76, 77	Hwy. 3 to Dutton; to West Lorne; to Rodney.....	11.7	22,061.23
81	Delaware to Mt. Brydges.....	4.8	5,000.35
TOTALS.....		26.64	51,325.61

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used	Tons Chips Used
53	Brantford west limits to approximately 2 miles west of Burford.....	8.5	27,200	1,252.10

Bridges Built

Hwy. No.	Location	Work Begun	Opened to Traffic	Type of Structure
2	Thames River, Delaware Twp.	1958	1959	Structural Steel
22, 11	Medway Creek, London Twp.....	1958	1959	Structural Steel
401	West Oxford Twp.	1958	1959	Reinforced Concrete
401	Westminster Twp., 6 miles south of London	1959	1959	Reinforced Concrete

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
4	C.N.R.	Elgin County, Southwold Twp.....	2 flash lights 1 Bell
59	C.N.R.	Oxford County, North Norwich Twp.....	2 flash lights 1 Bell

New Buildings

Hwy. No.	Location	Type	Begun	Completed
401	Near Junction Highway 401 and 73.....	Weigh scale house	1959	1960
401	Near Junction Highways 401 and 73.....	Weigh scale house	1959	1960
2	Thamesford Patrol Yard.....	Salt Shed	1959	1959
81	Parkhill Patrol Yard.....	Salt Shed	1959	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	160	21.46
Development roads built.....	.....	.....	.....
Off-road parks maintained.....	11	.....	.....
Roads snowploughed and kept open, King's Highways.....	.....	.....	531
Roadside picnic places maintained.....	122	.....	.....
Routine maintenance, King's Highways.....	.....	.....	531
Salt for de-icing roads (raw).....	.....	15,500	531
Salt in sand, stockpiled.....	.....	2,007.11	.....
Sand for winter maintenance.....	.....	50,188.20	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	1,869,760	.....	.....
Shrubs received and planted this year.....	7,285	.....	.....
Signs erected or replaced.....	5,081	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	82.75
Snow hedges planted this year.....	.....	.....	5.1
Traffic lights installed this year.....	.....	.....	.....
Weed control.....	.....	.....	900
Zone painting on King's Highways.....	.....	.....	620



Structure over Highway 401 2 miles west of Wellington Road. Contract 59-18, London District.

DISTRICT No. 3 — STRATFORD**L. D. BARRETT, P.Eng., District Engineer****Construction**

During the fiscal year ending March 31st, 1960, work was completed on three carry-over contracts and six new contracts. Six new contracts were begun but not completed.

Grading, Culverts and Granular Base was begun but not completed on the following highways: Highway 100, Thamesford to Kintore; Highway 97, Galt westerly for 7.8 miles. This contract included an overhead over the C.P.R.

Grading, Culverts, Granular Base and Hot Mix Paving was begun but not completed on: Highway 19, Woodstock north for 8.7 miles; Highway 19, Stratford north for 16.25 miles.

Granular Base and Hot Mix Paving was completed on Highways 24 and 51, Erin to Caledon. This included grading, street widening, curbs, gutters, sewers and sidewalks in the Village of Erin.

Grading and Paving for a curve revision was completed on Highway 7, $1\frac{1}{4}$ mile east of the junction of Highways 7 and 100, thus improving an intersection and eliminating a very sharp curve.



Culvert construction on Highway 21 south of the Village of St. Joseph. Contract 59-214, Stratford District.



C.P.R. overpass on Highway 97 west of Galt. Contract 58-189, Stratford District.

Hot Mix Paving: Highway 21, Bayfield to St. Joseph; Highway 86, Elmira easterly for 7 miles; Highway 86, Wingham easterly for 8 miles.

Resurfacing: Highway 21, Kincardine south for 24.99 miles was completed.

An erosion control structure and approaches on Highway 21, 1½ miles south of St. Joseph was completed.

Work was begun on a similar structure, 5½ miles north of Grand Bend but not completed.

A concrete structure was begun over the Grand River on Highway 8, Freeport Diversion. Due to a late call, this was not completed.

A concrete structure was completed over Mud Creek on Highway 19, north of Woodstock.

Weather conditions were favourable for all construction but due to late calling and size, some contracts were not completed. In general good progress was made during the construction season.

Maintenance

The winter maintenance was heavy this year. The first part of the winter there was much ground drifting as well as two ice storms which necessitated the use of a large quantity of salt. In the latter part of the winter the snow fall was heavy making it necessary to plough constantly.

Extensive repairs were completed this year by our district bridge crew on a total of 15 bridges. The work consisted of replacing handrails, posts, curbs, installing bridge drains, repairing wing walls, removal of old decks and replacing with 6-inch precast slabs, resurfacing and constructing a cantilever pedestrian walk.

Gravel was applied, with good results, to all gravel roads before the spring break-up.

Weed spraying was limited with only 23 miles being completed.

The amount of seeding completed this year was less than the previous year and therefore we were able to assist District No. 4 with their seeding program.

There were three new Standard 120-A sheds erected this year and the erection of two others began. Two of these will be used for salt storage and the remainder for equipment storage.

No traffic lights were installed but the following illuminated signals were erected: five red flashers on stop signs and eleven mercury vapour street lights.

The zone painting was not as effective as previous years. Wearing and reflecting quality was poor. Even on curves painted three times the paint is almost invisible.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
100	Thamesford to Kintore.....	5.56	1959	.....	5.0
19	Woodstock, northerly.....	8.7	1959	.....	8.7
19	Stratford to Milverton.....	16.25	1959	.....	16.25
21	Approx. 1¼ miles south of St. Joseph.....	1.4	1959	.....	1.4
97	Galt.....	7.8	1959	.....	4.0
21	Culverts 5.5 miles north of Grand Bend.....	0.33	1959	.....	0.2
TOTALS.....		40.04		.....	35.55

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
51	C.P.R. Overhead Credit River Bridge west of Caledon.....	0.70	1958	0.35	0.35	164,076
7	Curve revision 1¼ mi. east of Int. Hwys. 7 and 100.....	0.34	1959	.....	0.34	10,550
100	Thamesford northerly.....	5.56	1959	.....	.....	146,100
19	Woodstock northerly.....	8.70	1959	.....	.....	267,150
19	Stratford to Milverton.....	16.25	1959	.....	.....	439,400
21	Approx. 1¼ mi. south of St. Joseph.....	1.4	1959	.....	1.4	1,990
97	Galt westerly.....	7.8	1959	.....	.....	716,540
21	Culv. 5.5 mi. north of Grand Bend.....	0.33	1959	.....	.....	429
7	Kitchener easterly.....	3.30	1957	3.0	0.30	3,150
TOTALS.....		44.38		3.35	2.39	1,749,385

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
24, 51	Erin to Caledon.....	8.7	1959	.....	8.7	55,535
21	Bayfield to St. Joseph.....	12.0	1959	.....	12.0	2,297
21	Kincardine southerly.....	24.99	1958	1.5	23.5	30,133
86	Elmira, easterly.....	5.9	1959	.....	5.9	4,860
86	Wingham, easterly.....	8.1	1959	.....	8.1	333
TOTALS.....		59.69		1.5	58.20	93,158



Hot mulch paving north of Drysdale. Day labour, Stratford District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
21	Kincardine southerly for 24.99 miles.....	24.99	38,726
7	Kitchener east to Breslau.....	3.3	1,627
86	Elmira easterly.....	5.9	18,681
86	Wingham easterly.....	8.1	11,822
7	Curve revision $1\frac{1}{4}$ miles east of Int. of Hwys. 7 and 100.....	0.34	675
19	Stratford to Milverton.....		2,700
24, 51	Erin to Caledon.....	8.7	21,560
21	Bayfield to St. Joseph.....	12.0	20,039
TOTALS.....		63.33	115,830

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
24	Jct. Hwys. 24 and 51 to Orangeville.....	7	2,450
86	Jct. Hwys. 7 and 86 to Bluevale.....	18	8,750
97	4 miles west of Galt to Plattsville.....	12	6,400
100	Thamesford to Jct. Hwys. 7 and 100.....	15	13,160
4	Exeter to Jct. Hwys. 4 and 9.....	52	150
6	Guelph to Arthur.....	22	40
7	4 mi. east of Kitchener to 3.3 mi. east of Kitchener.....	1.2	20
7	5 mi. south of Stratford to Elginfield.....	17	60
7, 8	Kitchener to Jct. Hwys. 7 and 8 and 7B and 8B.....	12	10
7B, 8B	Jct. Hwys. 7, 8 and 7B, 8B east to Jct. Hwys. 7, 8 and 7B, 8B west.....	6	20
8	Preston to Clinton.....	31	1,740
19	Milverton to Jct. Hwys. 19 and 86.....	9	100
21	Bayfield to Kincardine.....	42	40
23	Jct. Hwys. 7 and 23 to Palmerston.....	52	520
24	Galt to Guelph.....	10	2,720
83	Russeldale to 2 mi. west of Russeldale.....	2	210
84	Hensall to St. Joseph.....	10	10
85	Waterloo to Elmira.....	8	2,360
86	Elmira to Lucknow.....	53	332
TOTALS.....		390.2	39,092

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
7	Kitchener east to Breslau.....	3.3	1957	1.6	1.7	12,911
86	Elmira easterly.....	5.9	1959	.....	5.9	16,032
86	Wingham easterly.....	8.1	1959	.....	8.1	20,253
7	Curve revision, 1¼ mi. east of Int. of Hwys. 7 and 100.....	0.34	1959	.....	0.34	1,225
19	Woodstock northerly.....	8.7	1959	.....	3.0	9,940
19	Stratford to Milverton.....	16.25	1959	.....	5.0	16,840
24, 51	Erin to Caledon.....	8.7	1959	.....	8.7	24,973
21	Approx. 1¼ mi. south of St. Joseph.....	1.4	1959	.....	1.4	405
21	Bayfield to St. Joseph.....	12.0	1959	.....	12.0	30,115
TOTALS.....		64.69		1.6	46.14	132,694

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
21	Bayfield to St. Joseph.....	11.0	39,698	1,241
24	Jct. of Hwy. 51 to Orangeville.....	8.0	45,223	1,710
24, 51	Erin to Caledon.....	7.0		
86	Wingham easterly.....	8.0	40,378	1,267
86	Bluevale easterly.....	3.0		
86	Elmira easterly.....	6.0		
86	Jct. Hwy. 7 to 2 mi. east of Elmira.....	12.0	64,867	2,462
86	2 mi. west of Elmira to 1 mi. west of Wallenstein.....	3.0		
97	South of Plattsville to 4 miles west of Galt	13.0	39,835	1,286
100	Thamesford to Jct. Hwys. 7 and 100.....	15.0	47,485	1,685
TOTALS.....		86.0	277,486	9,651

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
21	Kincardine south for 24.99 miles.....	22.99	58,000

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
19	Mud Creek, approx. 4.5 miles north of Woodstock.....	1959	Oct. 1959	Struct. Steel Span Conc. Deck

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
19	C.N.R.	Stratford - 3	X
19	C.N.R.	Stratford — 3	X

New Buildings

Hwy. No.	Location	Type	Begun	Completed, Date
4	Patrol Site, Wingham.....	Salt Storage	1959	1959
4	Patrol Site, Exeter.....	Salt Storage	1959	1959
100	Patrol Site, St. Marys.....	Equip. Storage	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	301.56	43
Roads snowploughed and kept open, King's Highways.....	18	.....	621.02
Roadside picnic places maintained.....	300	.....	.....
Routine maintenance, King's Highways.....	.....	.....	601.23
Salt for de-icing roads (raw).....	.....	10,574	586
Salt in sand, stockpiled.....	.....	2,177	.....
Sand for winter maintenance.....	.....	71,950	.....
Scale houses maintained.....	1	.....	.....
Seeding by Department's Forces .....(sq. yds.)	837,707.2	.....	.....
Shrubs received and planted this year.....	2,123	.....	.....
Signs erected or replaced.....	2,598	.....	.....
Snow fences erected, dismantled, stored.....	.....	.....	170
Weed control.....	.....	.....	23
Zone painting on King's Highways.....	.....	.....	525



Bridge on Highway 86 at West Montrose. Contract 58-47, Stratford District.

DISTRICT No. 4 — HAMILTON**R. E. RICHARDSON, P.Eng., District Engineer****Construction**

A heavy construction programme was carried out during 1959-60.

Majority of the work was on Highway 401, between Highway 25 and Highway 8, involving 25 contracts. In this area four major grading contracts between Highway 25 and Highway 24 were completed, along with ten associated structures. In addition, considerable work was carried out on eleven other structure and grading contracts.

Other completed paving and grading contracts were on Highway 8, from Highway 5 northerly to Sheffield; Highway 20, four lane undivided, from Stoney Creek to Highway 53; Highway 53 from Highway 6 to Highway 56; Highway 55 from Hamilton city limits to Highway 53, and service roads along the Q.E.W. in St. Catharines.

In addition, work was begun on three other contracts, namely the C.N.R. overhead at Cayuga on Highway 54, Fairchild Creek bridge and diversion on Highway 54 at Onondaga, and grading, structures, culverts and paving of Highway 6, Caledonia to Hagersville.

Maintenance

Underground heating pipes were installed under the pavement at the plaza of the Burlington Bay Skyway to eliminate the necessity of time-consuming and costly snow removal. The installation proved quite effective and at no time after the unit was put into operation, was there any accumulation of snow or ice on this section of pavement.



Grading on Highway 401. Contract 58-120, Hamilton District.



Overpass on Highway 401. Contract 58-635, Hamilton District.

This district used fine salt for sweetening stockpiled sand prior to its application on the highway for a considerable portion of the winter, but it did not prove as satisfactory as coarse salt in melting the snow and ice on the highway.

Construction of the new district office located at the west end of the Burlington Bay Skyway was begun.

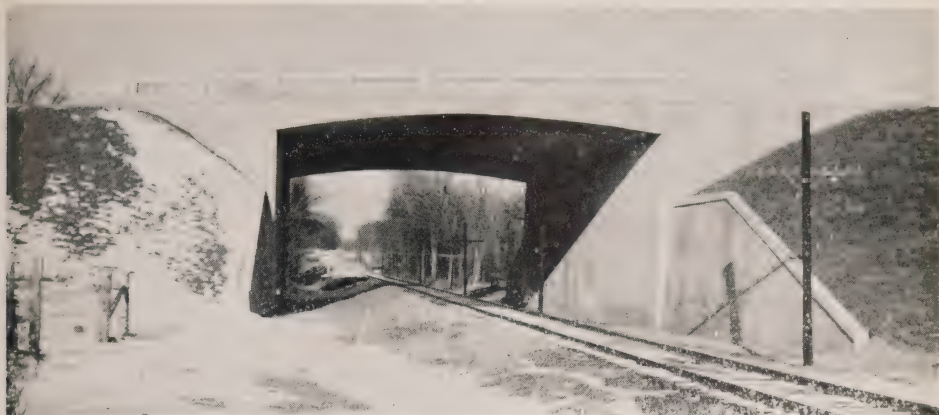
A new eleven-bay garage and office was constructed at the Burlington Bay Skyway. Two patrols besides the skyway patrol operated quite satisfactorily out of this location.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
8	Peter's Corners to Sheffield.....	8.60	1958	3.20	5.40
	Q.E.W. Service Road, St. Catharines.....	1.80	1959	.....	1.80
55	Hamilton city limits to Junction of Highway 53.....	7.65	1959	.....	7.65
53	Elfrida to Ryckman's Corners.....	4.59	1958	3.00	1.59
401	Highway 25 (Milton) to Campbellville.....	6.83	1958	2.00	4.83
401	Campbellville Road to Highway 6.....	5.57	1959	.....	5.57
401	.03 miles west of Highway 6 westerly.....	4.57	1959	.....	4.57
401	Line between lots 10 and 11 — Con. 2, Puslinch westerly.....	0.60	1959	.....	0.40
401	0.16 miles west of Highway 24, westerly, including Speed River.....	1.58	1959	.....	1.30
401	West of Speed River westerly.....	0.66	1959	.....	0.50
401	Highway 24 interchange.....	0.51	1959	.....	0.51
401	Campbellville interchange.....	0.17	1959	.....	0.17
401	Welland Canal banks at Homer Skyway .. Structure road allowance between Nassa-gaweya and Esquesing Townships.....	0.36	1959	.....	0.36
	TOTALS.....	43.49		8.20	34.65

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
Q.E.W.	North and south approaches to					
	Burlington Bay Skyway.....	4.00	1957	2.50	1.50	5,058
8	Peter's Corners to Sheffield.....	8.60	1958	3.20	5.40	300,060
401	Highway 25 (Milton) to Camp- bellville Road.....	4.59	1958	3.00	1.59	89,089
401	Campbellville Road to Hwy. 6.	6.83	1958	2.00	4.83	14,825
5	Oakville Creek structure.....	1.01	1958	.....	0.50	21,296
401	From 0.03 miles west of High- way 6 westerly.....	5.57	1958	.....	5.57	20,327
401	From 0.60 miles west of road allowance between Lots 10 and 11 — Con. No. 2, Town- ship of Puslinch — westerly.	4.57	1958	.....	4.57	4,921
401	Township of Nassagaweya Lot 5 and 6, Con. No. 4, struc- ture and approaches.....	0.047	1958	.....	0.047	22,350
Q.E.W.	Service road, north and south side — between Lake St. and Ontario Street — St. Catharines.....	1.80	1958	.....	1.80	24,745
401	Speed River westerly.....	1.58	1958	.....	1.30	2,748
401	Puslinch Township road al- lowance between Con. 9 and 10 — structure approaches..	.....	1959	.....	.....	22,769
401	Road allowance between Nas- sagaweya and Esquesing Townships — structure.....	0.36	1959	.....	0.36	13,537
401	Nassagaweya Township bridge No. 13 — road allowance be- tween Con. 1 and 2	0.29	1959	.....	.....	9,853
53, 55	Elfrida to Ryckman's Corners — Highway 53 to Hamil- ton limits.....	7.65	1959	.....	7.65	185,961
401	Campbellville interchange — Con. No. 3 and 4, Nassaga- weya Township.....	0.51	1959	.....	0.51	14,466
401	County road allowance be- tween Lots 15 and 16, Pus- linch Township — structure	1.00	1959	.....	1.00	11,000
54	C.N.R. overhead at Cayuga ..	0.30	1959	.....	.....	6,268
401	Puslinch Township bridge No. 19 — Con. No. 2 — struc- ture .....	.....	1959	.....	.....	6,638
401	Highway 24 interchange.....	0.66	1959	.....	0.50	4,250
6	Caledonia to Hagersville. ..	7.80	1959	.....	.....	2,694
401	Underpass county road to Breslau .....	.....	1959	.....	.....	1,971
54	Fairchild Creek structure (On- ondaga Revision).....	2.93	1959	.....	.....	963
401	Underpass at township road to Speedville .....	.....	1959	.....	.....	1,515
Q.E.W.	Welland Canal.	0.17	1959	.....	0.17	16,680
TOTALS		60.267		10 70	37.297	803,984



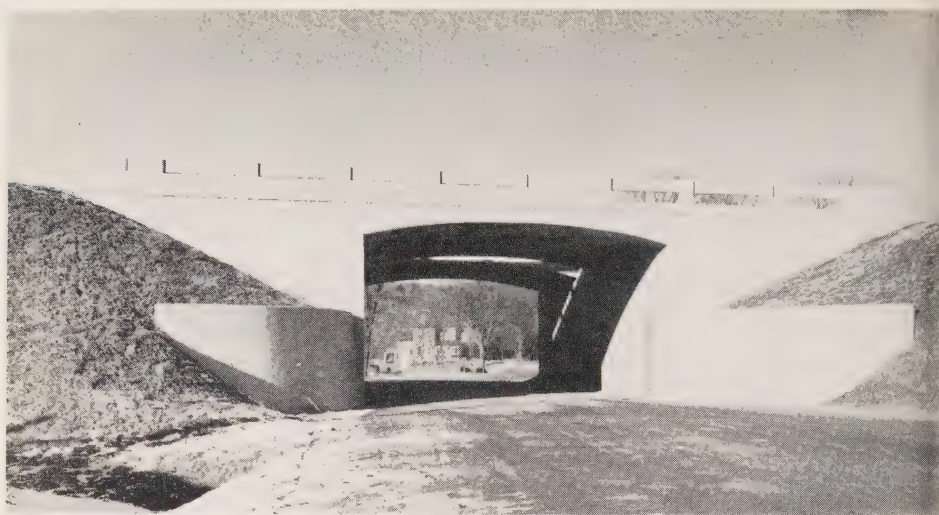
C.P.R. overpass on Highway 401. Contract 58-87. Hamilton District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Total Tons Placed 1959-60
	Q.E.W. service road to Freeman.....	1.06	1,021
20	South of Stoney Creek to Jct. Hwy. 53.....	3.50	5,117
	Q.E.W. service road to St. Catharines.....	1.80	1,560
Q.E.W.	North and south approaches to Skyway.....	4.00	2,468
5	Peter's Corners to Sheffield.....	8.60	14,032
401	Road allowance between Esquesing and Nassagaweya.....		185
401	Nassagaweya Township bridge No. 13.....		223
53, 55	Elfrida to Ryckman's, Hamilton limits to Jct. 53.....	7.65	24,725
401	Campbellville interchange.....		49
401	Puslinch Township bridge No. 19.....		303
401	Highway 24 interchange.....	0.66	290
TOTALS		27.27	48,973

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
Q.E.W.	Burlington to Fort Erie.....	66.8	2,841
2	Oakville to Brantford.....	32.3	1,595
3	Fort Erie to Simcoe.....	85.5	2,527
3A	Chambers Corners to Welland.....	9.3	105
3C	Fort Erie to Ridgeway.....	6.8	166
5	Trafalgar to Brant County Line.....	32.3	706
6	Port Dover to Guelph.....	59.3	1,103
7	Guelph to Highway 10.....	30.4	65
8	Galt to Niagara Falls.....	57.8	1,569
8A	St. Davids to Queenston.....	2.8	31
20	Burlington to Niagara Falls.....	45.9	731
24	Simcoe to Port Dover.....	9.3	126
25	Q.E.W. to Hwy. 7.....	22.2	75
52	Hwy. 2 to Hwy. 97.....	13.9	232
53	Hwy. 20 to Hwy. 2.....	13.1	11
54	Cayuga to Cainsville.....	26.9	53
55	Hamilton to Hwy. 53.....	1.9	9
56	Elfrida to Hwy. 3.....	14.8	155
57	Bismark to Beckett's Bridge.....	8.8	16
58	Port Colborne to Hwy. 8.....	15.7	670
97	Hwy. 6 to Galt.....	13.7	1,056
99	Dundas to Hwy. 24.....	16.9	72
102	Dundas to Hamilton.....	4.0	55
TOTALS		590.4	13,969



Overpass on Highway 401. Contract 58-187, Hamilton District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
20	South of Stoney Creek to Hwy. 53.....	3.50	1958	1.20	2.30	19,619
Q.E.W.	North and south approaches to Skyway.....	4.00	1958	2.50	1.50	3,284
	Q.E.W. service road — Freeman.....	1.06	1958	.....	1.06	2,865
8	Peter's Corners to Sheffield.....	8.60	1958	.....	8.60	31,836
	Q.E.W. service road — St. Catharines.....	1.80	1959	.....	1.80	4,039
401	Road allowance between Esquesing and Nassagaweya.....	.....	1959	.....	.....	517
401	Nassagaweya Twp. Bridge No. 13.....	.....	1959	.....	.....	460
401	Structure, Campbellville interchange.....	.....	1959	.....	.....	384
55, 53	Elfrida to Ryckman's Corners and Hwy. 53 to Hamilton limits.....	7.65	1959	.....	7.65	31,091
401	Puslinch Twp. bridge No. 19.....	.....	1959	.....	.....	455
TOTALS.....		26.61		3.70	22.91	94,550

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
2, 6	Vicinity of Hamilton.....		
7, 25	Cainsville, Guelph, Georgetown, Acton, Milton.....	10	10,000
3, 3C	Vicinity of Port Erie.....		
8, 20	Port Colborne.....		
58	Dunnville, Ridgeway.....		
Q.E.W.	Grimsby, St. Catharines, Niagara Falls, Bismark, Welland.....	13	13,000
3, 6	Vicinity of Dunnville.....		
24, 56	Jarvis, Hagersville, Port Dover, Simcoe, Blackheath, Elfrida.....	9	9,000
TOTALS.....		32	32,000

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Nassagaweya Twp., Lot 8, Con. 2.....	1958	1959	Rigid Frame
401	Nassagaweya Twp., Lot 5, Con. 4 and 5.....	1958	1959	Rigid Frame
401	Nassagaweya Twp., Lot 5, Con. 5 and 6.....	1958	1959	Rigid Frame
401	Nassagaweya Twp., Lot 5, Con. 4.....	1958	1959	Rigid Frame
401	Puslinch Twp., Lot 33, Con. 9 and 10.....	1959	1959	Rigid Frame
401	Road allowance Esquesing and Nassagaweya, Lot 5, Con. 1 and 7.....	1959	1959	Rigid Frame
401	Nassagaweya, Lot 9, Con. 1 and 2.....	1959	1959	Rigid Frame
401	Nassagaweya, Lot 7, Con. 3 and 4.....	1959	1959	Rigid Frame
401	Puslinch, Lots 15 and 16, Con. 2.....	1959	1959	Rigid Frame
401	Puslinch Twp., Lots 5 and 6, Con. 2.....	1959	1959	Rigid Frame

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
3	C.N.R.	Bertie Twp.....	Bell, 2 flashing lights
3	C.N.R.	Port Colborne.....	Bell, 2 flashing lights
3	N.Y.C.	Canboro Twp.....	2 bells, wigwags
3	C.N.R.	N. Cayuga Twp.....	Bell, 2 flashing lights
3	C.N.R.	N. Cayuga Twp.....	Bell, 2 flashing lights
3A	N.Y.C.	Wainfleet Twp.....	Bell, wigwag
3A	T.H. & B.	Crowland Twp.....	Bell, 2 flashing lights
3C	C.N.R.	Bertie Twp.....	Bell, 2 flashing lights, flagman
6	C.N.R.	Walpole Twp.....	Bell, 2 flashing lights
6	C.N.R.	Seneca Twp.....	2 bells, 2 flashing lights
7	C.N.R.	Chinguacousy Twp.....	Bell, 2 flashing lights
24	C.N.R.	Woodhouse Twp.....	Bell, 2 flashing lights
56	C.N.R.	Seneca Twp.....	Bell, 2 flashing lights
58	C.N.R.	Town of Thorold.....	Bell, 2 flashing lights
58	C.N.R.	Town of Merritton.....	Bell, 2 flashing lights
99	C.N.R.	Beverly Twp.....	Bell, 2 flashing lights, gates

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
7	Acton.....	Patrol H.Q. and plow storage	1958	1959
Q.E.W.	Burlington.....	Skyway H.Q. and plow storage	1958	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	4	534 (Gals.)	.....
Development roads built.....	.....	.....	.....
Off-road parks maintained.....	1	.....	.....
Roads snowplowed and kept open, King's Highways.....	.....	.....	627.65
Roadside picnic places maintained.....	30	.....	.....
Routine maintenance, King's Highways.....	.....	.....	627.65
Routine maintenance, secondary highways.....	.....	.....	.....
Salt for de-icing roads (raw).....	.....	1,174	627.65
Salt in sand, stockpiled.....	.....	10,357	.....
Sand for winter maintenance.....	.....	87,708	.....
Scale houses maintained.....	7	.....	.....
Seeding by department's forces..... (sq. yds.)	3,155,680	.....	.....
Shrubs received and planted this year.....	3,153	.....	.....
Signs erected or replaced.....	6,384	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	64
Traffic lights installed this year.....	2	.....	.....
Zone painting on King's Highways..... (gals.)	14,215	.....	904.89

Traffic light installed on Hwy. 5 at Trafalgar and one on Hwy. 58 at Glenview Avenue.

605 shrubs are heeled in at Burlington for planting this year. This is additional to the 3,153 shown above.



Underpass on Highway 401. Contract 59-20, Hamilton District.



C.P.R. overpass on Highway 400 north of Crown Hill. Contract 58-11. Owen Sound District.

DISTRICT No. 5 — OWEN SOUND**E. J. ORR, P.Eng., District Engineer****Construction**

During 1959, one lane of Highway 400 was extended from the Crownhill interchange to Craighurst. Construction was completed up to the base course and the road was opened to traffic in December 1959. Included in the construction was a C.P.R. overhead at Craighurst.

Two new structural steel bridges were completed and opened to traffic, one over the Saugeen River at Southampton and the other over the Nottawasaga River at Angus. The latter being the only "All Welded" truss in the Province.

Hot mix paving was completed from Durham to Dornoch, Highway 6, for 9.5 miles and also from Orangeville to Camilla, Highway 10 and 24, for 6.07 miles.

Maintenance

Two-way radio was installed in 3 base stations and in 8 vehicles. These proved to be highly successful during severe winter storms, allowing road and weather conditions to be relayed immediately to District Office and to the travelling public.

Cost accounting by patrol sections was introduced this year and found to be useful in indicating those sections of road requiring excessive attention and expenditure.

New bridges on Highway 21 Southampton and Highway 90 Angus were opened to the public.

Extension of Highway 400 north from Barrie to Craighurst was opened to vehicular traffic late in 1959.

Severe ice storms caused heavy damage to roadside trees and snow hedges in the Arthur to Barrie area.



Bridge over Saugeen River on Highway 6. Contract 57-144, Owen Sound District.



Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
21	Saugeen River Bridge to Southampton.....	1.0	1957	0.90	0.10
90	Nottawasaga River Bridge at Angus.....	0.41	1958	0.20	0.21
10, 24	Orangeville to Camilla.....	6.07	1958	0.10	5.97
6	Miller Lake to Ferndale.....	10.0	1959	.....	4.00
10, 24	Camilla to Primrose.....	5.98	1959	.....	.....
TOTALS.....		23.46		1.20	10.28

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
21	Saugeen River Bridge to Southampton.....	1.00	1957	0.5	0.5	4,943
90	Nottawasaga River Bridge to Angus.....	0.41	1958	0.30	0.11	2,126
10, 24	Orangeville to Camilla.....	6.07	1958	.....	6.07	202,048
400	Crownhill northerly.....	10.04	1959	.....	10.04	258,700
6	Ferndale Corners to Miller Lake.....	10.0	1959	.....	2.0	19,000
10, 24	Camilla to Primrose.....	5.98	1959	.....	.....	4,097
93	Crownhill to Craighurst.....	7.00	1959	.....	.....	1,900
TOTALS.....		40.50		0.8	18.72	492,814



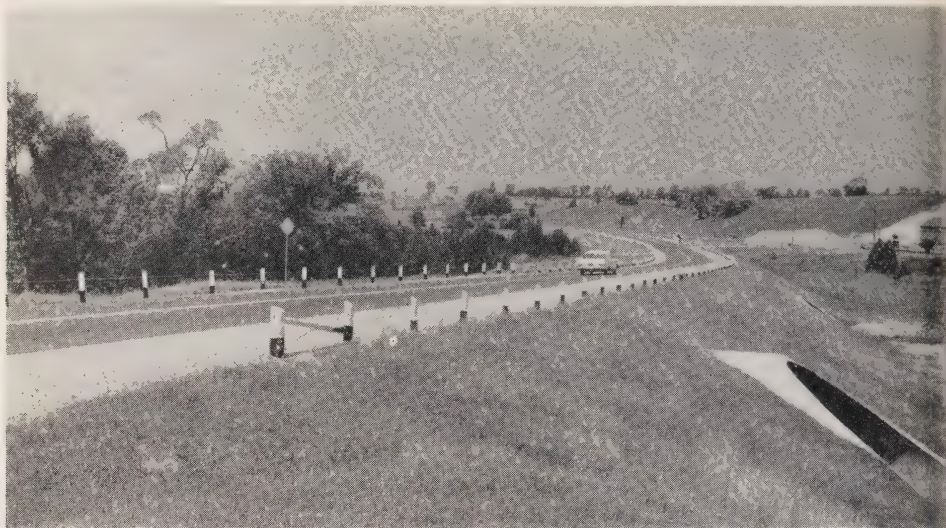
Crown Hill Interchange. Contract 59-46, Owen Sound District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Total Tons Placed 1959-60
6	Durham to Dornoch.....	10.4	16,349
10, 24	Orangeville to Camilla.....	6.07	17,484
21	Southampton Bridge.....	1.0	2,484
90	Angus Bridge.....	0.41	1,280
400	Crownhill, northerly.....	10.04	5,900
21	Hamlet of North Bruce vicinity.....	28.68	8,064
6	Two locations north of Wiarton.....	12.0	9,984
6, 10	Owen Sound and Hepworth vicinity.....	50.73	12,000
26	Meaford vicinity.....	33.0	8,043
27	Cookstown vicinity.....	15.0	9,995
24, 26, 91	Singhampton, Stayner vicinity.....	5.09	17,978
TOTALS.....		172.42	109,561

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
6	1 mi. north of Wiarton to 18.5 mi. south of Tobermory.....	23	9,036
4, 9	Hanover to Kincardine.....	38	4,019
89	Primrose to Cookstown.....	23	1,660
91	Duntroon to Stayner.....	5	4,000
92	Elmvale to Wasaga Beach.....	9	364
93	Crown Hill to Craighurst.....	7	5,600
27	Cookstown to Penetang.....	46	2,120
26	Stayner to Collingwood.....	10	1,160
21	Southampton to Tiverton.....	12	192
10	Chatsworth to Shelburne.....	44	1,460
TOTALS.....		217	29,611



Arch culverts on Highway 6 north of Mount Forest. Contract 58-208, Owen Sound District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
90	Nottawasaga River to Angus....	0.41	1958	.....	0.41	1,862
10, 24	Orangeville to Camilla.....	6.07	1958	.....	6.07	22,431
400	Crownhill, northerly.....	10.04	1959	.....	10.04	24,380
6	Durham to Dornoch.....	10.40	1959	.....	10.40	156,073
6	Mt. Forest to Orchard.....	7.27	1958	6.70	0.57	2,840
21	Southampton Bridge.....	1.0	1958	.....	1.0	3,178
TOTALS.....		35.19		6.70	28.49	210,764

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Cu. Yds. Sand Used 1959-60
6	1 mi. north of Wiarton to 14 mi. north of Wiarton.....	13	40,650	741
6	2 mi. north of Ferndale to 10 mi. north.....	10	31,270	570
91	Stayner to Duntroon.....	5	15,635	285
93	Crownhill to Craighurst.....	7	21,889	399
TOTALS.....		35	109,444	1,995

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
4	Durham to 10 miles easterly.....	10	30,000	1,282
6	Tobermory to 8 miles south.....	8	24,000	1,579
6	Ferndale to 5.2 miles south.....	5.2	14,945	1,021
TOTALS.....		23.2	68,945	3,882

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
21	Town of Southampton.....	1958	1959	Str. Steel
90	Nottawasaga River at Angus.....	1958	1959	Str. Steel
400	C.P.R. overhead near Craighurst.....	1958	1959	Str. Steel

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
4	C.P.R.	Brant Twp.....	2 lights, 1 bell
4	C.P.R.	Glenelg Twp.....	2 lights, 1 bell
4	C.N.R.	Brant Twp.....	2 lights, 1 bell
9	C.P.R.	Mono Twp.....	2 lights, 2 bells

New Buildings

Hwy. No.	Location	Type	Year Begun	Compl. Date
27	Waverley Patrol Yard.....	Equip. storage	1958-59	1959-60
24	Shelburne Patrol Yard.....	Salt storage	1959	1959
27	Cookstown Patrol Yard.....	Equip. storage	1959	1959
27	Cookstown Patrol Yard.....	Patrol office	1959	1959
4, 9	Walkerton Patrol Yard.....	Patrol office, tool storage	1959	1959
24	Shelburne Patrol Yard.....	Patrol office	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		3	3.7
Development roads built.....			6.11
(Off-road parks maintained.....)	1		
Roads snowploughed and kept open, King's Highways.....	15		534.47
Roadside picnic places maintained.....	86		
Routine maintenance, King's Highways.....			502.86
Salt for de-icing roads (raw).....		9,005	534.47
Salt in sand, stockpiled.....		3,969	
Sand for winter maintenance.....		77,850	
Seeding by department's forces..... (sq. yds.)	2,116,290		
Signs erected or replaced.....	2,711		
Snow fence erected, dismantled, stored.....			161
Snow hedges planted this year.....			
Weed control.....			235
Zone painting on King's Highways.....			506



C.P.R. overpass on Highway 6 at Bell Creek south of Mount Forest. Contract 57-59. Owen Sound District.

DISTRICT No. 6 — TORONTO**C. FRASER, P.Eng., District Engineer****Construction**

During the fiscal year 1959-60 the construction of Highway 401 was completed westerly from Highway 10 to Highway 25. Some 13.52 miles of concrete pavement were laid and was opened to traffic November 26. Improved techniques and the use of improved finishing machinery enabled our contractors to produce a much smoother riding surface than had hitherto been possible.

The construction of this section of Highway 401 included 18 structures. Among these were interchanges at Highways 10 and 25, at the 4th Line, Toronto Township and the 7th Line Trafalgar Township. Most of these structures had been completed before this fiscal year.

This construction completes Highway 401 across the Toronto District from Oshawa to Highway 25 — a distance of 61.11 miles.

In anticipation of the eventual widening of the Queen Elizabeth Way, and the completion of its controlled access feature, five new structures were completed and the widening of the bridge over Bronte Creek which was begun in 1958 was finished. Work was also begun on the new rotary-type interchange at Shook's Hill which is the 5th Line, Toronto Township. The construction of this interchange will complete the facilities necessary for the complete control of access to the Queen Elizabeth Way between the Humber River and Highway 25.

The structure over Highway 400 at the new interchange at Crownhill was completed and a large proportion of the work at the interchange itself was done. Work was also begun on the widening of two other major structures on the Queen Elizabeth Way and the construction of a major new bridge on Highway 401.

Maintenance

In addition to normal maintenance, certain experiments were carried out with a view to reducing the cost of shoulder maintenance. No definite conclusions have been drawn from these experiments but they indicated certain lines along which further investigation may prove profitable.

Additional overhead signing was provided on signal bridges on the Queen Elizabeth Way and Highways 400 and 401.

Bases for salt and sand storage were constructed in four locations using soil-cement stabilization. This work was carried out in co-operation with the Materials and Research Section who performed the experiments at the same time.

One item of new equipment which was brought into service and which received considerable favourable publicity in the press was known as "The Tree Saver". This machine enables us to transplant fairly large trees which would otherwise have to be destroyed to make way for new construction.

The winter proved unusually severe, and a much greater effort than normal was required for winter maintenance. The use of clear salt on Highway 401 under conditions of heavy traffic enabled us to provide a bare pavement at practically all times with the exception of a very few hours at the height of the worst storms.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
27	C.P.R. overhead, Hwys. 27 and 2.....	.31	1958	.25	.06
27	Hwy. 27 and Dixon Road.....	.56	1959	.....	.56
48	Markham to Ringwood.....	4.50	1959	.....	3.69
48	Ringwood to Ballantrae.....	4.96	1959	.....	4.96
400	Teston Side Road.....	.40	1958	.20	.20
400	Crown Hill interchange.....	.66	1959	.....	.66
400	401 northerly.....	4.39	1959	.....	4.39
400	Anne Street, Barrie.....	.28	1958	.22	.06
401	Service Road, Church St., Pickering.....	.50	1959	.....	.50
401	Hwy. 25 easterly.....	8.40	1959	.....	8.40
Q.E.W.	Service road, Lots 20, 21, Trafalgar.....	.43	1958	.30	.13
Q.E.W.	Service road, Hwy. 25 north and south....	7.00	1958	2.80	4.20
Q.E.W.	Appleby Road.....	.36	1958	.18	.18
Q.E.W.	Service road, Mississauga Town Line north	2.60	1959	.....	2.60
Q.E.W.	3rd. Line Trafalgar.....	.36	1959	.....	.36
Q.E.W.	Interchange west of Bronte.....	.62	1959	.....	.62
Q.E.W.	Shooks Hill.....	1.634	1959	.....	1.03
	Downsview Avenue.....	.328	1959	.....	.32
TOTALS.....		37.69		3.95	32.93

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
27	C.P.R. overhead, Hwy. 27, 2..	.31	1958	.20	.11	17,317
27	Hwy. 27 and Dixon Road.....	.56	1959	.....	.56	9,073
48	Markham — Ringwood.....	4.50	1959	.....	1.90	57,971
48	Ringwood — Ballantrae.....	4.96	1959	.....	4.97	10,567
400	Teston Side Road.....	.398	1959	.....	.398	18,047
400	Crown Hill interchange.....	.66	1959	.....	.66	32,099
400	Turning basins.....	.....	1959	.....	.....	4,657
400	Anne Street, Barrie.....	.28	1958	.18	.10	1,949
400	401 northerly.....	4.39	1959	.....	4.39	1,284
401	Channelizations.....	.39	1959	.....	.39	2,822
401	Service road, Church St., Pickering.....	.50	1959	.....	.50	12,215
401	Hwy. 10 westerly.....	5.12	1959	.....	5.12	268,295
401	Hwy. 25 easterly.....	8.40	1959	.....	8.40	470,407
Q.E.W.	Appleby Line.....	.36	1958	.14	.22	13,187
Q.E.W.	Mississauga Town Line ser- vice road.....	2.60	1959	.....	2.60	47,400
Q.E.W.	North service road, Kerr St.....	3.43	1958	2.77	.66	4,320
Q.E.W.	South service road, Kerr St.....	3.46	1958	2.50	.96	10,736
Q.E.W.	Hwy. 25, service road.....	7.00	1958	.45	6.55	121,864
Q.E.W.	Shooks Hill.....	1.034	1959	.....	.75	64,510
Q.E.W.	3rd. Line Trafalgar.....	.36	1958	.10	.26	14,697
Q.E.W.	West of Bronte Creek.....	.62	1959	.....	.62	46,158
Q.E.W.	4th. Line Trafalgar.....	.43	1958	.21	.22	11,252
	Downsview Avenue.....	.328	1959	.....	.328	21,304
	Downsview Avenue.....	.....	1959	.....	.....	2,600
401	Whitby to Oshawa.....	4.20	1959	.....	2.10	1,592
401	Liverpool Road interchange....	.53	1959	.....	.20	8,400
TOTALS.....		54.83		6.55	42.96	1,274,720



Construction of underpass on Q.E.W. Contract 58-610, Toronto District.

Granular Base Where No Grading Done

Hwy. No.	Location	Tons Placed 1959-60
401	16 Toronto, Streetsville approaches.....	589
401	1 Trafalgar, approaches.....	406
Q.E.W.	Walkers Line, approaches.....	21,449
TOTALS.....		22,444

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles	Tons Placed 1959-60
5	C.P.R. Overhead, Cooksville.....	0.50	1,463
27	Various locations.....	.71	1,022
48	Ringwood to Ballantrae.....	4.96	6,381
400	Various locations.....	10.05	52,177
401	Various locations.....	35.95	269,509
Q.E.W.	Various locations.....	24.21	30,277
TOTALS.....		76.38	360,829

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1959-60
	By D.H.O. various locations throughout district.....	6,314

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60	Pavement Width
401	Hwy. 10 westerly....	5.12	1959	.....	5.12	73,215.80	24'9"
401	Hwy. 25 easterly....	8.40	1959	.....	8.40	120,765.40	24'9"
Q.E.W.	Shooks Hill.....	1.034	1959	.....	.80	15,393.00	36'9"
TOTALS.....		14.554		.....	14.32	209,374.20	



Underpass on Highway 401, showing aluminum rail. Contract 58-648, Toronto District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1959-60	Tons Placed 1969-50
27	C.N.R. interchange 27, 2.....	.31	1959	.31	4,585
27	27 and Dixon Road.....	.56	1959	.56	1,343
48	Ringwood to Ballantrae.....	4.96	1959	4.96	13,247
48	Markham to Ringwood.....	4.50	1959	.20	1,785
400	Teston Side Road.....	.40	1959	.40	1,096
400	401 northerly.....	4.39	1959	4.39	38,746
400, 401	Channelization.....	.39	1959	.39	1,983
400	Anne St., Barrie.....	.28	1959	.28	1,954
400	C.N.R. Overhead, Innisfil Detour.....	.328	1959	.....	3,330
401	Service road, Church St., Pickering.....	.50	1959	.50	1,285
401	10 westerly.....	5.12	1959	5.12	9,789
401	25 easterly.....	8.40	1959	8.40	24,156
Q.E.W.	4th. Line Trafalgar.....	.43	1959	.43	2,475
Q.E.W.	North and south service roads, Nelson, Trafalgar, Hwy. 25.....	7.00	1959	7.00	16,507
Q.E.W.	Appleby Line.....	.36	1959	.36	2,155
Q.E.W.	3rd. Line Trafalgar.....	.36	1959	.36	2,870
Q.E.W.	West of Bronte Creek.....	.62	1959	.62	8,000
Q.E.W.	North and south service roads, Kerr St.....	9.13	1959	9.13	22,820
	Downsview.....	.....	1959	.....	900
	Downsview.....	.328	1959	.328	5,915
	District 6 garage.....	.....	1959	.....	1,235
Q.E.W.	Shooks Hill.....	1.034	1959	.25	5,690
Q.E.W.	Service road, Mississauga Town Line.....	2.60	1959	2.60	6,160
TOTALS.....		51.67		46.59	178,026

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Tons Sand Used
400	Service roads, King and Innisfil.....	15.0	47,505	111.40



Bridge widening on Q.E.W. over Bronte Creek. Contract 58-216, Toronto District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done	Tons Placed
		This Year	This Year
400	5 mi. north of 7, northerly.....	4.98	46,877
401	West Hill to Dunbarton.....	5.22	44,055
401	Dunbarton to Ajax.....	4.74	42,993
401	Ajax to Whitby.....	4.00	38,455
401	Whitby to Oshawa.....	2.56	25,399
TOTALS.....		21.50	197,779

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl.	Tons Placed
		1959-60	1959-60
Q.E.W.	4th. Line Trafalgar.....		136
	Various isolated patching.....		1,378
TOTAL.....			1,514

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
27	C.N.R. Overhead, 27 and 2.....	1958	1959	Steel beam
48	Little Rouge Creek, Markham Twp.....	1959	1959	Rigid frame concrete
400	Teston Side Road, Vaughan Twp.....	1958	1959	Rigid frame concrete
401	Streetsville, Toronto Twp.....	1958	1959	Continuous concrete beam
401	Toronto/Trafalgar Twp.....	1958	1959	Rigid frame concrete beam
401	Trafalgar Twp.....	1958	1959	Continuous concrete beam
401	Hwys. 401 and 25.....	1959	1959	Continuous concrete beam
Q.E.W.	Applewood Overpass.....	1958	1959	Pre-cast beam
Q.E.W.	Lots 20, 21, Trafalgar.....	1958	1959	Rigid frame
Q.E.W.	Lots 25, 26, Trafalgar.....	1959	1959	Rigid frame
Q.E.W.	Bronte Creek widening.....	1958	1959	Rigid frame concrete arch
Q.E.W.	Bronte interchange.....	1959	1959	Rigid frame
Q.E.W.	Walkers Line, Nelson Twp.....	1959	1959	Rigid frame concrete
Q.E.W.	Shooks Hill — structure 1.....	1959	1959	Continuous concrete beam
	— structure 2.....	1959	1959	Rigid frame
	Crownhill interchange.....	1959	1959	Rigid frame box girders

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
47	C.N.R.	Whitechurch Twp.....	2 lights, 2 bells
10	C.N.R.	Caledon Twp.....	2 lights, 2 bells
50	C.N.R.	Albion Twp.....	2 lights, 2 bells

New Buildings

Hwy. No.	Location	Type	Year Begun	Compl. Date
400	Barrie.....	Salt shed	1959	1959
12	Brooklin.....	Salt shed	1959	1959
47	Stouffville.....	Salt shed	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		134	45
Roads snowploughed and kept open, King's Highways.....			749.35
Routine maintenance, King's Highways.....			749.35
Salt for de-icing roads (raw).....		26,900	749.35
Salt in sand, stockpiled.....		6,500	
Sand for winter maintenance.....		124,500	
Scale houses maintained.....	6		
Seeding by department's forces.....(sq. yds.)	2,565,200		
Shrubs received and planted this year.....	10,648		
Signs erected or replaced.....	8,505		
Snow fence erected, dismantled, stored.....			77.90
Traffic lights installed this year.....	5		
Weed control.....			427
Zone painting on King's Highways.....(gals.)	20,278		975



Construction of underpass on Highway 400. Contract 58-648, Toronto District.

DISTRICT No. 7 — PORT HOPE**G. F. WETHERALL, P.Eng., District Engineer****Construction**

A major feature of the construction programme during the Fiscal Year 1959-60 was bridge construction. During the year, 41 structures were under various stages of construction throughout the district. Of these structures, 33 were on Highway 401 between Newcastle and Brighton with 20 being completed.

Five structures were under construction on the T.C.H. Peterborough By-pass with the Jacksons Creek structure on Highway 133 T.C.H. being completed. Also, the C.N.R. structure on Highway 36 Lindsay By-pass and the Ouse River structure at Norwood were completed. The Talbot River bridge on Highway 12 Gamebridge was also under construction.

With many consultant designs, various types of structures have been constructed including 8 with prestressed beams or slabs, 8 concrete box girders, 4 arch culverts as well as structural steel and rigid frame types.

Worthy of note is the 994-foot structure under construction over the Otonabee River on the Peterborough By-pass.

Grading was underway in various stages on 45.5 miles of Highway 401 between Newcastle and Brighton with 18.1 miles completed during the year. Grading was also underway in various stages in the Peterborough area, on 22 miles of road with 11.0 miles being completed on Highway 28, on 5.0 miles of Highway 33; Bloomfield to Wellington, on 8.3 miles of Highway 14 south of Belleville and on 46 miles of Highway 7A from Bethany to junction of Highways 7A and 35.

Hot mix paving was underway on 17.7 miles of Highway 401 between Newcastle and Port Hope. Hot mix paving was also completed on 11.0 miles of Highway 28 and on 3.1 miles of Highway 16 at Kirkfield.

Maintenance

The eight-bay patrol garage constructed at Lindsay by district day labour forces, was completed in December 1959. The five-bay patrol garage constructed by the Dept. of Public Works, on Highway 14 north of Bloomfield was completed in August 1959. Two additional bulk storage salt sheds were constructed by district day labour forces.

The erection of an overhead sign at the junction of Highways 115 and 35 proved very effective in the movement of traffic at this intersection. Illumination of four major intersections was completed in 1959 and work was underway on a fifth intersection in early March 1960.

Surface treatment carried out in the district in 1959 was highly satisfactory with very little stone loss resulting during the winter months.

The district experienced an exceptionally severe winter resulting in high winter maintenance costs and heavy consumption of sand and salt. The continued heavy construction program resulted in another year of extensive grass seeding and tree planting with good results.



Bridge over Scugog River on Highway 7 west of Highway 35, Port Hope District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
28, 133	Fraserville to Peterborough.....	11.00	1957	5.00	6.00
401	Newtonville 5.5 mi. easterly.....	5.50	1957	4.00	1.50
401	Junction of Hwys. 2 and 115 to 6.61 mi. easterly.....	6.61	1957	4.00	2.61
401	Morrish Road to Hwy. 28.....	4.53	1958	2.00	2.53
401	Hwy. 45 easterly.....	5.39	1958	2.00	3.39
401	1.51 mi. east of Haldimand Twp. Line to Vernonville	5.17	1958		5.00
401	Port Hope, Hwy. 28 to Cobourg, Hwy. 45.....	5.90	1958	1.00	5.00
401, 115	Hwy. 115 interchange.....	1.20	1958		1.20
401	Road allowance between Lots 22 and 23, Cramahe Twp., Hwy. 30.....	5.90	1958		5.80
7 TCH	C.P.R. overhead, Peterborough By- pass.....	0.81	1958		0.74
33	Wellington to Bloomfield.....	5.08	1958		5.08
133 TCH	Jacksons Creek to Hwy. 7.....	3.50	1959		3.30
14	Rossmore to Crofton	8.33	1959		7.55
7A	Hwy. 35 to west limits of Bethany.....	4.65	1959		4.65
7 TCH, 115	Peterborough By-pass.....	6.20	1959		2.53
12 TCH	Revision at Gamebridge.....	1.33	1959		1.10
401	Interchange at Hwy. 30.....	0.40	1959		0.16
TOTALS.....		81.50		18.00	58.14

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
401	Jct. Hwys. 2, 115 to 6.61 mi. east.....	6.61	1957	4.00	2.61	3,118
28, 133 TCH	Fraserville to Peterborough..	11.00	1957	5.00	6.00	126,758
401	Morrish Rd. to Hwy. 28.....	4.53	1958	2.00	2.53	1,543
401	Morrish Rd. and Hwy. 401 interchange.....	0.30	1958	.....	0.30	1,073
401	Hwy. 401 and 2 interchange at Port Hope.....	0.55	1958	.....	0.55	31,516
36	C.N.R. overhead east of Lindsay.....	0.65	1958	.....	0.65	3,296
7 TCH	C.P.R. overhead at Peter- borough By-pass.....	0.81	1958	.....	0.81	39,524
401	Mill St. inter. (Newcastle)..	0.26	1958	.....	0.26	26,907
401	Hwy. 45 to 1.5 mi. east of Ham.-Hald. Twp. Line....	5.39	1958	.....	.....	36,556
7 TCH	C.N.R. overhead (Otonabee Twp.).....	0.17	1958	.....	.....	280
401	Choate Rd. structure.....	.....	1958	.....	Complete	5,023
401	Hwy. 401, 28 interchange....	0.37	1958	.....	0.37	21,218
401	Ganaraska River structure..	.....	1958	.....	Complete	17,184
401	1.5 mi. east of Hald. Twp. Line to Vernonville Rd....	5.17	1958	.....	.....	59,594
45	Ouse River St. in Norwood Village.....	0.68	1958	.....	0.68	35,464
401	Rd. allow. between Lots 8 and 9, Hope Twp.....	.....	1958	.....	Complete	19,400
33	Wellington to Bloomfield....	5.08	1958	.....	5.08	134,800
401	Rd. allow. between Lots 16 and 17, Clarke Twp.....	.....	1958	.....	Complete	17,292
401	Rd. allow. between Lots 32 and 33, Clarke Twp.....	.....	1958	.....	Complete	3,169
401	Hwy. 28 to Hwy. 45.....	5.90	1958	.....	.....	50,690
401	Rd. allow. between Lots 9 and 10, Hamilton Twp.....	.....	1958	.....	Complete	5,734
401	Rd. allow. between Lots 18 and 19, Hope Twp.....	.....	1958	.....	Complete	18,761
401	Rd. allow. between Lots 22 and 23, Cramahe Twp. to Hwy. 30.....	5.09	1958	.....	.....	17,967
401	Vernonville Rd. to Rd. al- low. between Lots 22 and 23, Cramahe Twp.....	6.00	1959	.....	.....	8,485
133 TCH	Jacksons Creek to Hwy. 7....	3.50	1959	.....	1.92	58,048
14	Rossmore to Crofton.....	8.33	1959	.....	3.50	78,407
401	Rd. allow. between Hope and Hamilton Twp.....	0.23	1959	.....	0.18	9,659
401	Rd. allow. between Lots 28 and 29, Hamilton Twp....	.....	1959	.....	.....	6,206
401	Hwy. 115 easterly 5.43 mi. Jct. Hwys. 35 and 7A to Bethany.....	5.43	1959	.....	5.43	350,953
7 TCH, 115	Peterborough By-pass.....	4.65	1959	.....	4.10	132,959
12 TCH	Revision at Gamebridge.....	6.20	1959	.....	.....	7,184
401	Rd. allow. between Lots 28 and 29, Cramahe Twp.....	1.33	1959	.....	.....	6,460
401	Rd. allow. between Lots 28 and 29, Cramahe Twp.....	0.33	1959	.....	.....	1,692
401	East end of Hwy. 2 inter- change to 5.34 mi. west....	5.34	1959	.....	3.90	343,069
46	Kirkfield north to Bexley City Rd.....	3.07	1959	.....	3.07	10,512
401	Hwy. 2 to Hwy. 28.....	2.00	1959	.....	1.76	130,324
401	5 mi. east of Newcastle easterly 5 mi.....	5.00	1959	.....	5.00	342,255
401	Interchange at Hwy. 30.....	0.40	1959	.....	0.16	10,755
TOTALS.....		104.37		11.00	48.86	2,173,835

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1959-60	Tons Placed 1959-60
106	Welcome to Dale.....	2.6	1959	Complete	2,978
35, 35A	Jct. Hwys. 35 and 121 to Fenelon Falls....	4.98	1959	Complete	11,318
	TOTALS.....	7.58			14,296

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
28, 133 TCH	Fraserville to Peterborough.....	6.00	37,005
			7,340
			18,615
401	Morrish Road to Hwy. 28.....	2.53	38
401	Interchange Hwy. 401 and Morrish Road.....	0.30	415
2, 401	Hwy. 2 and 401 interchange at Port Hope.....	0.55	3,648
36	C.N.R. overhead east of Lindsay.....	0.65	3,296
7 TCH	C.P.R. overhead, Peterborough By-pass.....	0.81	1,596
			5,837
401	Mill St. interchange (Newcastle).....	0.26	2,107
401	Hwy. 45 to 1.5 mi. east of Hamilton-Haldimand Twp. Line....		6,512
28, 401	Hwys. 401 and 28 interchange.....	0.37	3,726
			616
401	1.5 mi. east of Haldimand Twp. Line to Vernonville Rd.....		16,892
45	Structure over Ouse River in Norwood Village.....	0.68	5,772
401	Road allowance between Lots 8 and 9, Hope Twp.....	Complete	2,555
33	Wellington to Bloomfield.....	5.08	48,400
			9,100
401	Road allowance between Lots 16 and 17, Clarke Twp.....	Complete	2,160
401	Road allowance between Lots 32 and 33, Clarke Twp.....	Complete	1,035
401	Hwy. 28 to Hwy. 45.....		10,108
401	Road allowance between Lots 9 and 10, Hamilton Twp.....	Complete	1,311
401	Road allowance between Lots 18 and 19, Hope Twp.....	Complete	2,571
401	Rd. allow. between Lots 22 and 23, Cramahe Twp. to Hwy. 30.....		3,422
401	Vernonville Rd. to Rd. allow. Lots 22 and 23, Cramahe Twp. Jct. Hwys. 7 and 12 to Oakwood.....	10.40	8,485
7			37,739
133 TCH	Jacksons Creek to Hwy. 7.....	1.92	18,490
14	Rossmore to Crofton.....	3.50	4,062
401	Road allowance between Hope and Hamilton Twps.....	0.18	3,047
401	Road allowance between Lots 28 and 29, Hamilton Twp.....		1,103
401	Hwy. 115 easterly 5.43 miles.....	5.43	131,006
			9,066
7A	Jct. Hwys 35 and 7A to Bethany.....	4.10	18,505
401	Road allowance between Lots 28 and 29, Cramahe Twp.....		1,692
401	East end of Hwy. 2 interchange 5.3. mi. west.....	3.90	99,700
46	Kirkfield North to Bexley City Road.....	3.07	2,074
			1,173
			3,620
401	Hwy. 2 to Hwy. 28.....	1.76	33,962
401	5 mi. east of Newcastle, easterly 5 mi.....	5.00	120,858
			6,734
401	Interchange at Hwy. 30.....	0.16	3,063
2	Colborne to Newcastle.....	Complete	3,236
106	Welcome to Dale.....	2.60	5,930
35, 35A	Jct. Hwys. 35 and 121 to Fenelon Falls.....	4.98	11,318
			6,554
	TOTALS.....	64.23	725,494



Structure at Highways 401 and 28. Contract 58-191, Port Hope District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
7A	Nestleton Station to Jct. 35.....	7.0	210
33	Carrying Place to Consecon.....	6.0	500
36	Nogies Creek to Burleigh Falls.....	24.0	3,620
45	Roseneath to Norwood.....	16.0	4,111
500	Bobcaygeon to Jct. 121.....	12.0	357
503	Kinmount to Kirkfield.....	47.5	1,056
505	Hwy. 46 to Uphill.....	11.0	3,575
507	Hwy. 36 northerly 18.5 mi.....	18.5	2,492
TOTALS.....		142.0	15,921

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
28, 133	Fraserville to Peterborough	11.00	1957	5.00	6.00	28,268
401	Hwys. 2 and 401 interchange at Port Hope.....	0.55	1958	.....	0.55	1,067
36	Lindsay C.N.R. overhead.....	0.65	1958	.....	0.65	1,621
401, 28	Hwy. 401 and 28 interchange....	0.37	1958	.....	0.37	882
45	Structure over Ouse River in Norwood.....	.....	1958	.....	.....	2,154
46	Kirkfield north to Bexley County Road.....	3.07	1959	.....	3.07	8,890
401	Hwy. 115 easterly 5.43 mi.....	5.43	1959	.....	3.50	44,270
401	East end of Hwy. 2 interchange to 5.34 mi. west.....	5.34	1959	.....	2.50	23,695
401	Hwy. 2 to Hwy. 28, including Hwy. 28 interchange.....	2.00	1959	.....	0.60	7,269
401	5 mi. east of Newcastle, east- erly 5 mi.....	5.00	1959	.....	3.00	30,580
TOTALS.....		33.41		5.00	20.24	148,697



Grading and barrel arch culvert on Highway 401 at Grafton Creek. Contract 58-211, Port Hope District

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Tons Sand Used
		1959-60	1959-60	1959-60
7A	Jct. Hwy. 115 to Caesarea.....	15.0	41,482	1,265
36	Nogies Creek P.O. to Burleigh Falls.....	14.0	38,491	1,200
45	Norwood to 10 mi. south.....	10.0	27,400	870
46	Kirkfield to Coboconk.....	5.0	13,500	435
133	Scott's Corners northerly 2.0 mi.....	2.0	5,400	169
503	Kirkfield to Kinmount.....	31.0	85,193	2,645
505	Uphill to 2.0 mi. southerly.....	2.0	5,300	171
507	Hwy. 36 to Cochrane Corners.....	10.5	29,800	1,025
TOTALS.....		89.5	246,566	7,780

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done	Tons Placed
		1959-60	1959-60
2	From Colborne to Newcastle — Jct. of Hwys. 2 and 115.....	40.00	5,990
7 TCH	From Oakwood to Jct. of Hwys. 7 and 12.....	10.40	31,515
35, 35A	Jct. of Hwys. 35 and 121 to Jct. of Hwys. 35 and 35A, Jct. of Hwys. 35 and 35A to Penelon Falls.....	4.98	12,314
106	Welcome to Dale.....	2.60	7,397
TOTALS.....		57.98	57,216

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl. 1959-60	Tons Placed 1959-60
500, 121	Kinmount to 1.8 mi. southerly.....	1.8	2,950
503	2 mi. west of Kinmount to 3.2 mi. westerly.....	3.2	5,300
TOTALS.....		5.0	8,250

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Tons Chips Used
36	Jct. 28 and 36 westerly for 5 mi.....	5.0	14,000	530
36	Bobcaygeon to Nogies Creek.....	4.7	13,200	495
500	Bobcaygeon north.....	3.0	8,345	315
500	2 mi. south of Jct. 121 southerly.....	2.0	5,550	215
503	Kinmount westerly.....	2.0	5,500	208
503	Norland westerly.....	1.8	5,000	190
503	Sebright easterly.....	5.8	16,050	610
503	3.7 mi. north of Kirkfield northerly.....	4.0	11,000	420
TOTALS.....		27.3	78,645	2,883

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
133 TCH	Jacksons Creek.....	1958	Open	Rigid frame
401	Morrish interchange.....	1958	Open	R. C. box girder
36	C.N.R. overhead, Lindsay By-pass.....	1958	Open	S. st. beam reinf. sl.
7 TCH	C.P.R. overhead, Peterborough By-pass..	1958	Open	Str. st. beam reinf. sl.
401	Mill St. interchange Newcastle.....	1958	Open	Reinf. c. box girder
401	Hwys. 28 and 401 interchange.....	1958	Open	C. rig. fr. sl. and gird.
401	Haldimand Twp. bridge 16.....	1958	Open	Reinf. c. box girder
45	Ouse River Bridge, Norwood.....	1958	Open	Reinf. c. b. girder
401	Hope Twp. bridge 13.....	1958	Open	Str. st. b. pres. slab
401	Clarke Twp. bridge 16.....	1958	Open	Str. s. gir. pres. slab
401	Clarke Twp. bridge 5.....	1958	Open	Prest. b. reinf. sl.
401	Ontario St. underpass.....	1958	Open	Reinf. c. box girder
401	Hamilton Twp. bridge 13.....	1958	Open	Str. st. g. prest. sl.
401	Hope Twp. bridge 8.....	1958	Open	Prest. b. reinf. sl.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
7, 12	C.N.R.	Brock Twp.....	2 lights, 1 bell
7A	C.P.R.	Cavan Twp.....	2 lights, 1 bell
2	C.P.R.	Hamilton Twp.....	1 short arm

New Buildings

Hwy. No.	Location	Type	Begun	Completed
35	2 mi. south of Lindsay.....	Patrol garage	1959	Dec. 1959
35	2 mi. south of Lindsay.....	Salt shed	1959	Nov. 1959
14	2 mi. north of Bloomfield.....	Patrol garage	1958	August 1959
28	Jct. 115 and 28.....	Salt shed	1958	July 1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium for de-icing roads.....		18.5	.....
Off-road parks maintained.....	11	.....	.....
Roads snowploughed and kept open, King's Highways.....	18	.....	630.59
Roads snowploughed and kept open, Secondary Highways.....	4	.....	99.69
Roadside picnic places maintained.....	107	.....	.....
Routine maintenance, King's Highways.....	.....	.....	630.59
Routine maintenance, Secondary Highways.....	.....	.....	99.69
Salt for de-icing roads (raw).....	.....	11,203.35	630.59
Salt in sand, stockpiled.....	.....	3,864.15	.....
Sand for winter maintenance.....	.....	81,291	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces..... (sq. yds.)	2,966,920	.....	.....
Shrubs received and planted this year.....	688	.....	.....
Signs erected or replaced.....	5,848	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	106.9
Traffic lights installed this year.....	1	.....	.....
Weed control.....	.....	.....	249.1
Zone painting on King's Highways..... (gals.)	9,680	.....	799.71
Zone painting on Secondary Highways.....	.....	.....	20.00



Underpass on Highway 401 at road allowance between Hope and Clarke Townships.
Contract 58-48, Port Hope District.

DISTRICT No. 8 — KINGSTON**T. A. SHARPE, P.Eng., District Engineer****Construction**

During 1959, Kingston District's main work was on Highway 401, with more than 150 continuous miles under paving contract, from the Joyceville Sideroad, west of Gananoque to Edward Street in Prescott. From Prescott westerly to Long Beach is reinforced concrete pavement for 17 miles. The south lane was opened to traffic in 1959, with the north lane to be completed in 1960. This is the first concrete pavement placed in Kingston District since 1934.

Highway 401 from the Joyceville Sideroad to Gananoque was opened to traffic in 1959, while 11 miles of the south lane from Gananoque to Rockport was rebuilt and opened to traffic. From Rockport easterly 10 miles, the granular base and base paving was completed and re-opened to traffic. The granular and base paving on the remaining 3 miles is to be completed in 1960, along with the top paving.

Grading was begun on sections of Highway 401 from Highway 38, at Kingston, westerly to Odessa, and from the Napanee River westerly to Highway 41. This latter section involved the temporary re-routing of a section of the Canadian National Railway so that a rock cut could be made under the railway and a new railway bridge built.

Grading contracts were awarded for 3 miles on Highway 37, for 6 miles on Highway 38 and for 6 miles on Highway 15. These contracts will be completed and paved in 1960.

Two very good pieces of new equipment were used in 1959, a screed and float combination for the concrete pavement. It is mounted on a very long wheelbase which improves the riding quality of the pavement. The other piece is a vibratory compaction unit mounted on rubber with vibrating steel plates which did an excellent job on compacting granular materials.

An unusual construction feature occurred on Highway 401 west of Kingston. Here a deposit of semi-liquid clay containing about 50% water and of a depth in excess of 30 feet was left in place and the highway was floated over it on a 5-foot pad of sand cushion. This was done since it was felt that any attempt to excavate would have been unsatisfactory as the excavation would have filled up immediately and backfill would not have reached a satisfactory bottom.

Maintenance

Two sections of Highway 401, Joyceville Sideroad to Gananoque, and Crystal Beach to Prescott totalling 29 miles were opened to traffic, as well as 6 miles of Secondary Highway from Clarendon Station to Snow Road.

The District was supplied with two rotary mowers, one 3-ton truck, and one 5-ton snowplough for maintenance of above.

During the summer, an experiment with soil sterilants was carried out on guide rails in the district, using various materials to try to ease the problem of maintaining them clearly visible, particularly in sweet clover areas. This work began last year and will require at least one more season's evaluation to determine the permanence of treatment.

A new four-bay patrol building at Arden was occupied and completely landscaped. A six-bay building was completed at Marysville. Several patrol yards were planted to improve their appearance from the highway. District Maintenance forces undertook the fencing of Highway 96 to a 100 foot right-of-way for a distance of thirteen miles.

Winter day labour construction included the clearing of seventeen miles of 120 foot right-of-way on Highway 7 between Sharbot Creek and Kaladar in preparation for new construction and the clearing and partial reconstruction of Highway 509 from Clarendon Station to Snow Road.

In addition to this winter work, the size of the picnic area at Arden on Highway 7 was increased by landfill of low areas. Reditching, shouldering, extension of culverts, and replacement of entrances was carried out on Highway 2 from Napanee, 6 miles easterly. Crushed gravel stockpiles for shouldering and cold mix were supplied to the district at Kingston, Marysville, Lansdowne, Arden, and Sharbot Lake patrol yards.

New loading ramps allowing immediate adjustment for varying water levels were installed at the Bay of Quinte ferry crossing on Highway 33 to service the ferry "Quinte Loyalist".

A new patrol yard at the junction of Highways 2 and 401, west of Brockville, was acquired, graded, a paved sandpile base and entrance installed, and temporary salt sheds moved in for the 1959-60 winter season.



Grading on Highway 38. Contract 59-66, Kingston District.

Grading and Culverts

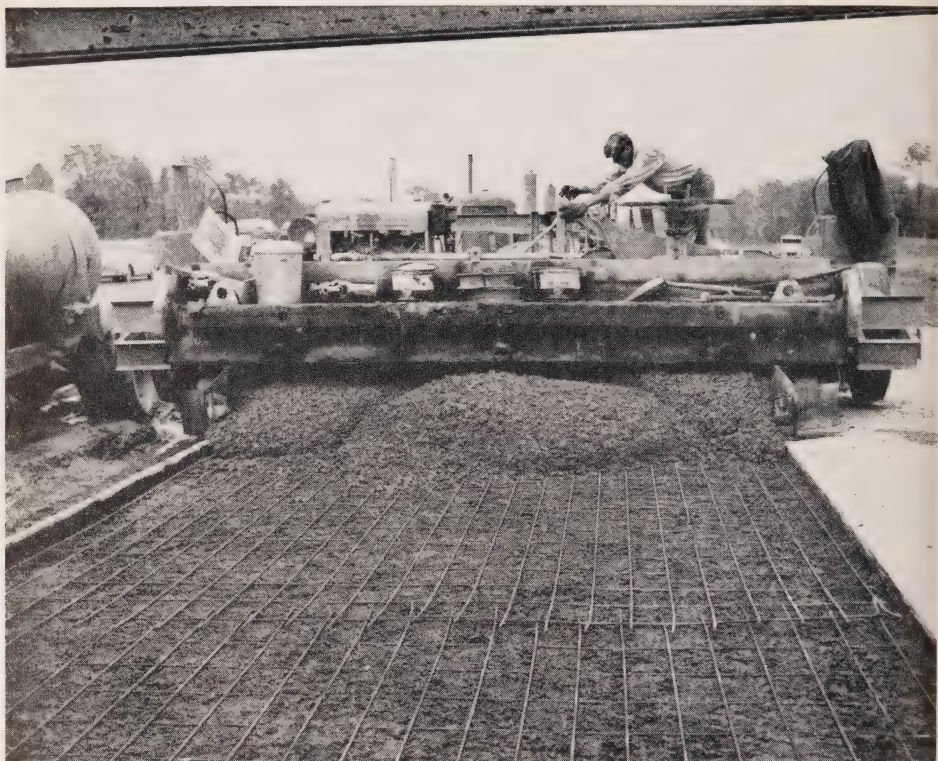
Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
37	Belleville to Corbyville.....	2.64	1959	.....	1.85
38	Glenvale to Hartington.....	8.96	1959	.....	7.20
	Service road, east limits, Gananoque, south to Hwy. 2.....	0.39	1959	.....	0.39
15	Morton to Elgin.....	5.50	1959	.....	3.00
401	C.N.R. subway at Napanee.....	1.60	1959	.....	1.20
502	Napanee C.N.R. crossing at Bridge St.	0.8	1959	.....	0.8
TOTALS.....		19.17			13.72

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
401	Joyceville Sideroad toLeed County Line.....	4.82	1958	4.82	.....	17,661
401	Leeds County Line to junction 2 east Gananoque.....	5.47	1958	2.19	3.28	94,166
401	Weigh scales and approaches to 7.5 mi. east Gananoque.....	0.34	1959	.....	0.34	2,893
401	Hwy. interchange 6 mi. west Brockville.....	0.69	1958	.....	0.69	33,814
37	Belleville to Corbyville.....	2.64	1959	.....	2.64	3,288
2	Kingston to Gananoque.....	3.73	1959	.....	0.25	900
2	Patrol yard (Crystal Beach).....	.....	1959	.....	.....	487
401	Interchange Hwy. 2 easterly to Interchange Hwy. 29.....	5.41	1959	.....	5.41	105,697
401	Interchange Hwy. 29 easterly to Maitland County Road.....	5.25	1959	.....	5.25	122,230
38	Glenvale to Hartington.....	8.96	1959	.....	7.20	64,017
401	Edward St. Prescott westerly to Maitland interchange.....	7.75	1959	.....	7.75	118,083
	Service Road, east limits, Gan- anoque south to Hwy. 2.....	0.30	1959	.....	0.30	482
15	Morton to Elgin.....	5.50	1959	.....	2.10	5,222
401	C.N.R. subway at Napanee.....	1.60	1959	.....	.....	1,979
502	Napanee C. N. R. Crossing "Sec." Bridge Street.....	.80	1959	.....	.80	12,010
TOTALS.....		53.26		7.01	36.01	582,929

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
401	Gananoque to Rockport.....	10.93	1958	3.5	7.43	132,347
401	Rockport easterly.....	13.10	1959	.....	10.00	175,220
2	Gananoque easterly to Water- ton.....	12.0	1959	.....	12.00	24,153
2	Crystal Beach westerly to Wa- terton.....	12.0	1959	.....	7.50	20,797
TOTALS.....		48.03		3.5	36.93	352,517



Paving of Brockville by-pass on Highway 401. Contract 59-32, Kingston District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
401	Interchange Hwy. 2 easterly to interchange Hwy. 29.....	5.41	18,885
401	401 interchange Hwy. 29 easterly to Maitland County Road.....	5.25	30,222
38	Glenvale to Hartington.....	8.96	13,488
401	Edward Street, Prescott west to Maitland Road.....	7.75	43,072
401	Rockport easterly 13.10 miles.....	13.10	8,483
2	Gananoque easterly to Waterton.....	12.00	24,153
2	Crystal Beach westerly to Waterton.....	12.00	20,797
401	Joyceville Sideroad to Leeds County Line.....	4.82	26,072
401	Leeds County Line junction Hwy. 2 east to Gananoque.....	5.47	23,830
401	Gananoque to Rockport.....	10.93	23,129
401	Weigh Scales approaches 7.5 mi. east to Gananoque.....	.34	106
401	Hwy. interchange west of Brockville.....	0.69	5,000
502	Napanee, C.N.R. crossing, Bridge Street.....	.08	1,368
2	Kingston to Gananoque.....	.10	100
15	Morton to Elgin.....	1.90	6,772
401	East of Gananoque.....	0.39	241
TOTALS.....		89.19	245,718

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
2	Junction Hwy. 16 to Crystal Beach interchange.....	17.18	1,235
401	Crystal Beach interchange to Thousand Island Bridge Road.....	15.50	665
2	Crystal Beach interchange to interchange 401, east of Gananoque	23.70	162
708	Hwy. 401 to International Boundary.....	1.35	18
2	Gananoque west limits to Kingston east limits.....	16.08	1,210
15	Jct. Hwy. 2 to Frontenac County line.....	19.80	1,478
15	Frontenac-Leeds County line to Crosby.....	16.06	.....
32	Gananoque to Jct. Hwy. 15.....	11.03	.....
42	Jct. Hwy. 15 (Crosby) to Westport south east limits.....	8.61	.....
2	Kingston west limits to Bridge Street, Napanee.....	20.73	8,480
Old 38	Cataraqui to Kingston, Portland line.....	8.94	2,120
2	Dundas Street, Napanee, to Trenton, east limits.....	34.30	3,160
502	Bridge Street, Napanee, to Jct. 2, Marysville.....	8.54	326
41	Napanee, Centre Street, to Jct. Hwy. 7.....	31.68	30
38	Kingston-Portland Twp. line to Jct. Hwy. 7.....	35.12	500
15	Jct. Hwy. 42, Smiths Falls, south limits.....	19.63	105
42	Delta, west limits to Jct. Hwy. 15.....	8.10	45
29	Brockville north limits to Smiths Falls south limits.....	28.98	1,002
42	Jct. Hwy. 29 to Delta west limits.....	15.97	430
7 T.C.	Jct. Hwy. 41 to Jct. Hwy. 14.....	32.25	.....
7 T.C.	Jct. Hwy. 15 to Jct. Hwy. 509.....	23.08	1,875
15	Smiths Falls northwest limits to Jct. Hwy. 7.....	11.48	625
7 T.C.	Jct. Hwy. 509 to Jct. Hwy. 41.....	24.95	7,000
509	Jct. Hwy. 7 to Snow Road.....	12.06	1,000
33	Kingston west limits to Glenora ferry dock.....	30.80	300
95	Hornes Point to Jct. Hwy. 96.....	7.19	406
96	Quebec Head to West end Con. 2.....	19.90	754
37	Jct. Hwy. 401 to Jct. Hwy. 7.....	27.52	541
14	Jct. Hwy. 401 to Jct. Hwy. 7.....	26.63	195
33	Trenton north limits to Jct. Hwy. 14.....	14.88	105
401	Drummeys sideroad to Jct. Hwy. 33.....	24.66	50
38	Jct. Hwy. 2 to Jct. Hwy. 401.....	1.88	346
401	Thousand Island Bridge Road to Jct. Hwy. 38 (New).....	31.55	1,880
401	Jct. Hwy. 16 to Crystal Beach interchange.....	22.10	10
TOTALS.....		652.23	55,103

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. 1959-60	Tons Placed 1959-60	Pav. Width
401	Edward St., Prescott, westerly to Maitland Road.....	0.62	1959	Base only	603	14'
401	401 Hwy. interchange to Mait- land County Road.....	1.60	1959	Base only	487	16'
TOTALS.....		2.22			1,090	

Concrete Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60	Pavement Width
401	Inter. Hwy. 2 easterly to inter. Hwy. 29.....	5.41	1959	.....	5.41	39,480	24'
401	Inter. Hwy. 29 easterly to Maitland Co. Road.....	5.25	1959	.....	5.25	37,940	24'
401	Edward St., Prescott, westerly to Mait- land Rd. inter.....	7.75	1959	.....	7.75	55,950	24'
TOTALS.....		18.41		.....	18.41	133,370	



Grading operations on Highway 15 north of Morton. Contract 59-243, Kingston District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
401	Joyceville Sideroad to Leeds County Line.....	4.82	1958	.....	4.82	10,929
401	Leeds County Line to Jct. Hwy. 2 east of Gananoque....	5.47	1958	.....	5.47	56,547
401	Gananoque to Rockport.....	10.93	1958	3.50	10.93	35,046
401	Weigh Scales and approaches to east of Gananoque.....	0.34	1959	.....	0.34	1,152
401	Hwy. interchange 6 mi. west of Brockville.....	0.69	1958	.....	0.69	13,659
	Service road east limits Gananoque.....	0.30	1959	.....	0.30	526
	Patrol yard, Crystal Beach.....	.....	.....	.....	.....	546
	Hwys. 2, 15, 38 various locations.....	.....	.....	.....	.....	5,998
	Hwys. 14, 37, 41, 33 various locations.....	.....	.....	.....	.....	8,185
	Joyceville Sideroad between Hwys. 2 and 401.....	.....	.....	.....	.....	699
502	Napanee C. N. R. crossing Bridge Street.....	0.80	1959	.....	0.80	3,261
	TOTALS.....	54.86		3.50	23.35	175,605

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
2	Gananoque easterly to Waterton.....	12.0	34,259
2	Crystal Beach westerly to Waterton.....	7.5	25,823
TOTALS.....		19.5	60,082

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
95, 96	Crosby, Delta, Westport, Forthton to Hwys. 95 and 96.....	52.3	116,163	5,836

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Interchange 6 mi. west of Brockville....	1958	1959	Conc. abuts., boxed beam
401	Maitland interchange, 1½ mi. north of Maitland.....	1958	1959	Conc. abuts. and reinf. box open beam

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
38	C.N.R., C.P.R.	Kingston subdivision, Smiths Falls subdivision	2 flashers, 1 bell
2	C.P.R.	Belleville subdivision.....	2 flashers, 1 bell
2	C.N.R.	Gananoque subdivision.....	2 flashers
37	C.N.R.	Campbellford subdivision.....	2 gates, 1 bell
15	C.N.R.	Montreal division.....	2 short arm gates

New Buildings

Hwy. No.	Location	Type	Begun	Completed
7 T.C.	½ mi. west of Arden Corner.....	(four-bay) garage	1958	1959
502	Marysville.....	(six-bay) garage	1958	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	1,250	89.00
Roads snowploughed and kept open, King's Highways.....	14	.....	617.23
Roads snowploughed and kept open, Secondary Highways.....	2	.....	19.38
Roadside picnic places maintained.....	78	.....	.....
Routine maintenance, King's Highways.....	.....	.....	617.23
Routine maintenance, Secondary Highways.....	.....	.....	19.38
Salt for de-icing roads (raw).....	.....	9,966	658.53
Salt in sand, stockpiled.....	.....	2,370	.....
Sand for winter maintenance.....	.....	35,687	.....
Scale houses maintained.....	2	.....	.....
Seeding by department's forces..... (acres)	464.4	.....	.....
Shrubs received and planted this year.....	21,937	.....	.....
Signs erected or replaced.....	2,750	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	35.00
Weed control.....	.....	.....	838 Single
Zone painting on King's Highways..... (gals.)	12,833	.....	952.00
Zone painting on Secondary Highways.....	.....	.....	21.00



Underpass and zone striping on Highway 401 at junction with Highway 32. Contract 56-130, Kingston District.



Bridge construction on Highway 401 near Lancaster. Contract 58-168, Ottawa District.

DISTRICT No. 9 — OTTAWA**L. E. WALKER, P.Eng., District Engineer****Construction**

Granular and Concrete work on the Eastern Extension and Stage 1 of the four lane divided Ottawa Queensway was under contract this year over a distance of 5.7 miles. Within this section, there are six separate structures under tender consisting of four interchanges and two underpasses. Three structures are being completed this year and the remaining three structures are in the trim stage.

On stage 2 of the Ottawa Queensway and the Western extension to Highway 15, from Highway 15 to the intersection of Carling Avenue and Kirkwood Avenue, a distance of 4.5 miles, four grading and culvert contracts are in progress. Within this section there are eight structures, all included in the grading and culvert contracts, consisting of seven interchanges and one overpass. Three of these structures have been completed. Four structures are very near completion, and H Piling has begun on the one remaining structure.

The new grade was paved on Highway 43 for 1 mile east of Chesterville to Highway 31. An existing section of Highway 43 in this area was resurfaced, a total of 9.47 miles.

On Highway 34 from Lancaster to Alexandria resurfacing base was laid for 13.2 miles. This will be completed in 1960.

On Highway 401 the east bound lane from Summerstown station to 1 mile east of Lancaster, 6.98 miles, grading has been completed. From Cornwall to Summerstown Station 7.3 miles 70% of the grading has been completed. The Raisin River structure is 90% complete and the C.N.R. structure east of Cornwall is 75% complete. The grading from Highway 16 to Iroquois 11.5 miles was 69% completed this year.

On Highway 15 T.C.H., from Perth to Drummond Centre, paving was completed for 7.5 miles and the old section of Highway 15 in this area was resurfaced over a total of 101 miles. The Innisville By-pass was paved over 1.06 miles. The C.P.R. overpass and the Mississippi River Bridge on the Carleton Place By-pass were opened to traffic. Paving of this By-pass will be done in 1960.

The grading on Highway 29 from Pakenham to the junction of Highway 29 and 17, 8.0 miles, was 70% completed. On Highway 17, westerly from Cobden to Haley's Station, the grading and paving were completed for 8.12 miles. From Haley's Station northerly 2.5 miles was resurfaced.

Maintenance

This year we carried on normal summer maintenance with special emphasis on shoulder maintenance. Five crushed gravel contracts for shouldering were completed. Day labour shouldering was carried out to bring the shoulders throughout the district up to a high standard to ensure safety.

Winter maintenance was very heavy this year with a record snowfall. The winter maintenance staff handled this challenge very efficiently and economically. A five-bay patrol garage was completed at Carleton Place, and a four-bay patrol garage at Winchester. Zone painting, sign erection and forestry work was carried out as required and applied to all new grading and paving to ensure over-all safety.



Overpass on Highway 17A (T.C.H.) at Green's Creek. Contract 58-48, Ottawa District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17	North of Haley Station to north of Cobden	8.12	1958	.....	8.12
15 T.C.	Mississippi River bridge at Innisville.....	1.06	1958	.....	1.06
Q'way	Carling Avenue interchange.....	.76	1958	.....	.76
Q'way	Nicholas St. extension.....	0.60	1958	.....	0.60
Q'way	Hare Avenue to western city limits.....	2.20	1959	.....	2.20
Q'way	Hare Avenue N. E., 1.3 mi.....	1.30	1959	.....	1.20
43	From Hwy. 31 to Chesterville.....	9.47	1959	.....	9.47
401	13 mi. east of Cornwall.....	0.16	1958	.....	.09
401	Cardinal to Iroquois.....	5.07	1958	.....	3.39
401	From Hwy. 16 to Cardinal co. road.....	5.08	1958	.....	4.68
401	Approx. 5.18 mi. west of Lancaster.....	7.30	1958	.....	5.87
15	Perth to Drummond.....	7.20	1959	.....	7.20
401	Summerstown county road to 1 mi. west of Lancaster.....	6.98	1959	.....	6.98
29	Pakenham to Jct. of Hwys. 17 and 29.....	8.00	1959	.....	4.00
17	C.P.R. overhead at Shields.....	0.91	1959	.....	0.73
15 T.C.	Mississippi River bridge to Carleton Place By-pass.....	0.15	1958	.....	0.15
17 T.C.	St. Laurent Blvd. to east of Greens Creek....	3.57	1958	.....	3.57
15 T.C.	C.P.R. overhead to Carleton Place By-pass	.08	1958	.....	.08
17 T.C.	Montreal Road, Ottawa east.....	0.50	1958	.....	0.50
15 T.C.	Carleton Place By-pass.....	2.48	1958	.....	2.48
Q'way	Tremblay Road, Ottawa, on old Hwy. 17 under structure.....	.....	1958	.....	.....
Q'way	Bridge 31 Alta Vista Drive.....	.06	1957	.....	.06
Q'way	Bridge 33 St. Laurent Blvd.....	.....	1957	.....	.....
Q'way	Hurdman's bridge to St. Laurent Blvd.....	1.70	1958	.....	1.70
Q'way	"A" Rideau River to east city limits.....	1.30	1959	.....	.78
17 T.C.	"B" east city limits to 0.6 miles east of Greens Creek.....	4.40	1959	.....	.005
15, 17 T.C.	Interchange Hwys. 15 and 17.....	0.80	1959	.....	.01
TOTALS.....		79.25	.....	.....	65.685



Highway 15, Carleton Place by-pass. Contract 58-38, Ottawa District.

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	North of Halesy Station to north of Cobden.....	8.12	1959	.....	8.12	276,221.36
15 T.C.	Mississippi River bridge at Innisville.....	1.06	1959	.....	1.06	30,587.30
Q'way	Carling Ave. interchange.....	.76	1958	.....	.76	67,559.00
Q'way	Nicholas St. extension.....	0.60	1958	.06	.54	29,681.07
Q'way	Hare Ave. to west city limits..	2.20	1959	.....	1.20	51,570.66
Q'way	Hare Ave. N.E. 1.3 mi.....	1.30	1959	.....	.72	37,501.00
43	From Hwy. 31 to Chesterville..	9.47	1959	.....	9.47	9,841.40
403	13 mi. east of Cornwall.....	.16	1958	.....	.13	5,983.00
401	Cardinal to Iroquois.....	5.07	1958	.....	2.08	1,824.00
401	From Hwy. 16 to Cardinal co. Road.....	5.08	1958	.....	.03	372.00
401	Approx. 5.18 mi. west of Lancaster.....	7.30	1958	.....	4.30	36,853.00
401	Summerstown co. Rd. to 1 mi. west of Lancaster.....	6.98	1959	.....	6.98	50,906.93
29	Pakenham to Jct. of Hwys. 17 and 29.....	8.00	1959	.....	6.25	156,456.00
17	C.P.R. overhead at Shields.....	0.91	1959	.....	0.91	4,860.00
15 T.C.	Mississippi River bridge to Carleton Place By-pass.....	0.15	1958	.....	0.15	11,361.00
15 T.C.	C.P.R. overhead to Carleton Place By-pass.....	.08	1958	.....	.08	700.00
17 T.C.	Montreal Rd. to Ottawa east....	0.50	1958	.....	0.50	52,501.83
15 T.C.	Carleton Place By-pass.....	2.48	1958	.....	2.48	89,721.43
Q'way	Tremblay Rd., Ottawa, on Hwy. 17 under structure.....	.....	1958	.....	.....	8,936.52
Q'way	Bridge 31, Alta Vista Drive.....	.....	1957	.....	.....	7,512.00
Q'way	Bridge 33, St. Laurent Blvd.....	.....	1957	.....	.....	10,455.84
Q'way	Hurdmans bridge to St. Laurent Blvd.....	1.70	1958	.....	1.70	28,522.23
Q'way	Bridge 35, Ave. "M", Ottawa..	.....	1958	.....	.....	5,481.36
Q'way	"A" Rideau River to east city limits	1.30	1959	.....	.87	130,512.00
17 T.C.	"B" east city limits to 0.6 mi. east of Greens Creek.....	4.40	1959	.....	.15	6,539.00
15, 17 T.C.	Interchange of Hwys. 15, 17....	.80	1959	.....	.19	7,219.00
TOTALS		68.42		.06	48.67	1,119,679.00

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	Haley's Station northerly 2.5 mi.....	2.50	1959	.....	2.50	5,077.38
34	Lancaster to Alexandria.....	13.20	1959	.....	13.20	1,715.00
	TOTALS.....	15.70		.....	15.70	6,792.38

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Total Tons Placed 1959-60
17	North of Haley's Station to north of Cobden.....	8.12	108,029.44
15 T.C.	Mississippi River Bridge at Innisville.....	.97	15,149.81
Q'way	Carling Avenue interchange.....	.76	14,140.00
Q'way	Nicholas Street extension.....	.56	15,222.12
Q'way	Hare Avenue to western city limits.....	.69	8,723.17
Q'way	Hare Avenue N.E. 1.3 mi.....	.66	6,270.00
43	From Hwy. 31 to Chesterville.....	9.47	34,592.13
17	Haleys Station northerly 2.5 mi.....	2.50	5,077.38
34	Lancaster to Alexandria.....	13.20	23,115.00
15 T.C.	Perth to Innisville.....	10.40	31,955.00
15	Perth to Drummond.....	7.20	5,987.98
401	Cardinal to Iroquois.....	2.08	1,280.00
401	From Hwy. 16 to Cardinal co. Rd.....	4.41	86,857.00
401	Summerstown co. Rd. to 1 mi west of Lancaster.....	6.98	9,704.51
29	Pakenham to Jct. Hwys. 17 and 29.....	2.06	22,248.00
15 T.C.	Perth to Drummond.....	7.50	100,343.95
15 T.C.	Mississippi River bridge to Carleton Place By-pass.....	0.15	10,489.00
15 T.C.	C.P.R. overhead to Carleton Place By-pass.....	3.57	405.00
17 T.C.	Montreal Road to Ottawa east.....	0.50	1,035.97
15 T.C.	Carleton Place By-pass.....	2.48	22,414.61
Q'way	Hurdmans bridge to St. Laurent Blvd.....	1.70	1,002.15
Q'way	Part A — Rideau River to eastern city limits.....	.78	60,279.00
17 T.C.	Part B — eastern city limits to 0.6 mi east of Greens Creek....	.009	228.00
15,17 T.C.	Interchange Hwys. 15 and 17.....	.25	3,658.00
17	Arnprior to 3 mi. west of Renfrew.....	.....	14,996.24
17 T.C.	Cumberland to Wendover.....	.....	14,993.64
17, 29	D.H.O. patrol yards — Carp, Mississippi River and Almonte..	.....	14,989.64
43	Finch west 6 mi.....	.....	5,004.18
34	Alexandria northerly 9 mi.....	.....	8,094.60
	TOTALS.....	86.999	646,285.52

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60	Pav. Width
Q'way	Nicholas Street extension.....	0.6	1958	.....	.....	1,710.00	24'



Construction of Mississippi River bridge on Highway 15. Contract 58-38, Ottawa District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	North of Haley's Station to north of Cobden.....	8.12	1959	.....	8.12	23,206.43
15 T.C.	Innisville By-pass.....	1.06	1959	.....	1.06	4,121.72
Q'way	Carling Avenue interchange....	.76	1958	.....	.....	5,972.70
Q'way	Nicholas St. extension.....	.60	1958	.....	.60	4,375.76
Q'way	Hare Avenue to western city limits.....	2.20	1959	.....	.....	819.78
Q'way	Hare Ave. N.E. 1.3 mi.....	1.30	1959	.....	.....	1,111.00
43	From Hwy. 31 to Chesterville..	9.47	1959	.....	9.47	23,961.48
15 T.C.	Perth to Drummond.....	7.80	1959	.....	7.80	30,944.65
Q'way	Part A, Rideau River to eastern city limits.....	1.30	1959	.....	.16	3,204.00
TOTALS...		32.61		.....	27.21	97,717.52

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	Cumberland, patching.....	.....	.....	.....	240
15	Carleton Place, patching.....	.....	.....	.....	489
17	Cobden, patching.....	.....	.....	.....	303
TOTALS.....		.....	.....	.....	1,032



Looking east on the Ottawa Queensway. Contract 57-209, Ottawa District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
17	Haley's Station northerly 2.5 mi	2.50	5,826.06
34	Lancaster to Alexandria.....	13.20	15,917.00
15 T.C.	Innisville to Drummond.....	2.60	6,654.31
15	Perth to Drummond.....	7.20	18,302.68
TOTALS		25.50	46,700.05

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type Structure
Q'way	Carling Ave. interchange.....	1958	1959	Composite steel beam and reinf. concrete
Q'way	Carling Ave. interchange	1958	1959	Composite steel beam and reinf. concrete
Q'way	Pinecrest Ave.....	1959	1959	Composite steel beam and reinf. concrete
Q'way	Clyde Ave.	1959	1959	Composite steel beam and reinf. concrete
401	Raisin River, 13 mi. E. of Cornwall	1959	1959	Reinforced concrete
15 T.C.	Mississippi River bridge on Carleton Place By-pass	1958	1959	Composite steel beam and reinf. concrete
15 T.C.	C.P.R. overhead — Carleton Place By- pass.....	1958	1959	Reinforced concrete
17 T.C.	Montreal Road — Ottawa East	1958	1959	Composite steel beam and reinf. concrete
Q'way	Tremblay Road.....	1957	1959	Composite steel beam and reinf. concrete
Q'way	St. Laurent Blvd...	1957	1959	Reinf. concrete, portal frame
Q'way	Ave. "M", Ottawa	1958	1958	Composite steel beam and reinf. concrete
Q'way	Alta Vista Drive	1957	1959	Composite steel beam and reinf. concrete

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
34	C.N.R.	Lochiel Twp.....	X
16	C.P.R.	Oxford Twp.....	X

New Buildings

Hwy. No.	Location	Purpose of Building	Year Begun	Completed
34	Lancaster patrol.....	Salt bulk storage	1959	October 1959
17	Goshen patrol.....	Salt bulk storage	1959	November 1959
16	Kemptville patrol.....	Salt bulk storage	1959	December 1959
29	Carleton Place patrol.....	Garage	1958	November 1959
43	Winchester patrol.....	Garage	1959	February 1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Roads snowploughed and kept open, King's Highways.....	11	.....	594
Roads snowploughed and kept open, Secondary Highways.....	2	.....	37
Roadside picnic places maintained.....	40	.....	.....
Routine maintenance, King's Highways.....	.....	.....	594
Routine maintenance, Secondary Highways.....	.....	.....	37
Salt for de-icing roads (raw).....	.....	14,678.55	.....
Salt in sand, stockpiled.....	.....	531	.....
Sand for winter maintenance.....(cu. yds.)	8,839	.....	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	1,684,320	.....	.....
Shrubs received and planted this year.....	2,292	.....	.....
Signs erected or replaced.....	1,837	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	15.65
Traffic lights installed this year.....	1	.....	.....
Weed control.....	.....	.....	593
Zone painting on King's Highways.....	.....	.....	820
Zone painting on Secondary Highways.....	.....	.....	11



Overpass on the Ottawa Queensway. Contract 58-260, Ottawa District.

DISTRICT No. 10—BANCROFT**C. R. ROBERTSON, P.Eng., District Engineer****Construction**

Hot mix paving was laid on Highway 60 from Deacon to Golden Lake and Highway 41 was re-graded from Kaladar to Northbrook.

Work began on a two-span structure over the Madawaska River at Combermere on Highway 62. The centre pier of this structure stands in 25' of strongly flowing water. Re-grading of Highway 62 from Combermere to Barry's Bay on Highway 62, and for eight miles south from Denbigh on Highway 41 was begun. Work continued through the winter.

Maintenance

Completed day labour projects included 3.0 miles of mulch pavement plus 1.5 additional miles of grading, culverts, granular base on Highway 127, mulch pavement for 5.0 miles, Coe Hill to Glen Alda on Secondary Highway 620 and the removal of a dangerous vertical curve on Highway 41, 19 miles north of Kaladar.

Additional salt sheds were constructed at Apsley, Dacre, and Bancroft, further improving patrol facilities.

Approximately 4,600 shrubs were planted this year, mostly for snow hedge purposes.

Surface treatment results were good using a new type of self-propelled mechanical spreader to complete 34.6 miles with aggregates varying from $\frac{3}{8}$ inch stone chips to screened sand and $\frac{5}{8}$ inch crushed gravel.



Grading on Highway 62 north of Combermere. Contract 59-84, Bancroft District.

The replacement of a narrow wooden structure by a 5' 9" x 8' 2" pipe arch culvert on Secondary Highway 506 was completed during the winter, greatly increasing the width of road crossing the narrows of Storey Lake.

An additional 7.19 miles of road was taken over by the Department, Secondary Highway 512 from Brudenell to Cormac.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
28	Jct. Hwys. 28 and 109.....	0.20	1959	.....	0.20
41	Kaladar to Northbrook.....	6.77	1959	.....	6.77
41	20 mi. north of Kaladar.....	0.40	1959	.....	0.40
41	Kilpecker Creek to Denbigh.....	7.97	1959	.....	.....
41	Jct. Hwy. 60 northerly.....	1.25	1958	.....	1.25
60	Village of Barry's Bay.....	0.36	1959	.....	.....
60	1.0 to 2.0 mi. east of Madawaska.....	1.00	1959	.....	1.00
62	Madawaska River at Combermere.....	0.36	1959	.....	.....
62	Combermere to Barry's Bay.....	10.25	1959	.....	.....
62	Curve revision at Alice.....	0.78	1959	.....	0.78
127	13.0 to 14.5 mi. north of Lake St. Peter....	.....	.....	.....	.....
500	8 mi. east of Bancroft.....	0.28	1960	.....	.....
504	Glen Alda westerly.....	1.00	1960	.....	.....
504	Village of Apsley.....	0.10	1960	.....	0.10
506	Various locations.....	.....	.....	.....	.....
513	Jct. Hwy. 132 northerly.....	.....	.....	.....	.....
620	Jct. Hwy. 504 to Coe Hill.....	5.00	1959	.....	5.00
28	Jct. Hwy. 109 channelization.....	0.25	1959	.....	0.25
TOTALS.....		35.97	.....	.....	15.75

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
41	Kaladar to Northbrook.....	6.77	1958	.....	6.77	184,056.43
62	Curve revision at Alice.....	0.78	1959	.....	0.78	21,091.14
TOTALS.....		7.55	.....	.....	7.55	205,147.57

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
41	Jct. Hwy. 60 to Griersford.....	1.43	275.78
60	1.5 mi. east of Deacon to Golden Lake.....	6.60	1,604.13
TOTALS.....		8.03	1,879.91

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
28	Eel's Creek at Apsley.....	0.28	190.00
62	Curve revision at Alice.....	0.78	700.67
504	Eel's Creek at Apsley.....	0.32	217.00
TOTALS.....		1.38	1,107.67



Madawaska River bridge on Highway 62 near Combermere. Contract 58-240, Bancroft District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
41	Jct. Hwy. 60 to Griersford.....	1.43	1959	.....	1.43	3,390.73
60	1.5 mi. east of Deacon to Gold- en Lake.....	6.60	1959	.....	6.60	16,378.29
	TOTALS.....	8.03		.....	8.03	19,769.02

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
127	Jct. Hwy. 60 to 15 mi. south.....	15.00	33,241	964.05
132	Dacre to Shamrock.....	6.60	16,593	721.80
500	Haliburton Bdry. to 3 mi. west of Bancroft, Bancroft to Hermon.....	22.50	49,885	1,664.40
504	Apsley — Glen Alda — Apsley.....	29.90	75,375	1,874.85
506	Hwy. 41 to Plevna.....	22.10	62,864	1,969.95
513	Dacre to Caldwell.....	9.20	23,080	644.85
517	Combermere to Carlow Twp. Rd.....	9.90	24,646	753.60
523	Madawaska to Lyell-Wicklow Twp. line.....	13.10	33,067	961.95
520	Coe Hill to Glen Alda.....	5.00	16,671	680.70
	TOTALS.....	133.30	335,422	10,164.15



Grading on Highway 627 near Wallace. Day labour, Bancroft District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1959-60	Tons Placed 1959-60
Old 60	C.N.R. crossing, Golden Lake to 2 mi. west.....	2.00	3,224.08

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
28	Eel's Creek at Apsley.....	0.28	.....	0.28	530
62	Curve revision at Alice.....	0.78	.....	0.78	1,500
127	6.08 mi. south of Jct. Hwy. 60 to 8.68 mi. south of Jct. Hwy. 60.....	2.60	.....	2.60	4,290
504	Eel's Creek at Apsley.....	0.32	.....	0.32	605
620	Jct. of Sec. Hwy. 504 to Coe Hill.....	5.00	.....	5.00	8,250
TOTALS.....		8.98	.....	8.98	15,175

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
60	From 8.0 mi. to 18.0 mi. east Algonquin Park H.Q.....	10.0	26,110	1,899.25
127	Lake St. Peter to 3.1 mi. north.....	3.1	8,205	588.15
500	Bancroft to 3 mi. west.....	3.0	8,247	674.10
521	Killaloe to 11.5 mi. north.....	11.5	31,513	1,983.75
620	Jct. Hwy. 62 to Coe Hill.....	7.0	19,597	1,174.54
TOTALS.....		34.6	93,672	6,319.79

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
28	Bancroft patrol yard.....	Salt shed	1959	January 1960
28	Apsley patrol yard.....	Salt shed	1959	December 1959
41	Dacre patrol yard.....	Salt shed	1958	September 1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	4	.....	.....
Development roads built.....	.....	.....	19.15
Off-road parks maintained.....	6	.....	.....
Roads snowploughed and kept open, King's Highways.....	7	.....	396.65
Roads snowploughed and kept open, Secondary Highways.....	11	.....	180.19
Roadside picnic places maintained.....	8	.....	.....
Routine maintenance, King's Highways.....	.....	.....	396.65
Routine maintenance, Secondary Highways.....	.....	.....	180.19
Salt for de-icing roads (raw).....	.....	2,642	.....
Salt in sand, stockpiled.....	.....	1,888	.....
Sand for winter maintenance.....	.....	30,000	.....
Scale houses maintained.....	2	.....	.....
Shrubs received and planted this year.....	4,646	.....	.....
Signs erected or replaced.....	2,400	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	19.89
Snow hedges planted this year.....	.....	.....	15
Weed control.....	.....	.....	256
Zone painting on King's Highways.....	.....	.....	360.90
Zone painting on Secondary Highways.....	.....	.....	24.30



Grading on Highway 62, south of Barry's Bay. Contract 59-84, Bancroft District.

DISTRICT No. 11—HUNTSVILLE**H. C. DERNIER, P.Eng., District Engineer****Construction**

Our work produced no unusual problems this year. All contracts in progress were at a stage that made winter work impractical and very little winter work was attempted by contract during winter of 1959-60.

Work on Highway 11 continued through the season and will continue this coming year. From Crown Hill to seven miles north the pavement was widened to forty-eight feet, or four lane undivided. This work was completed in October 1959. Work begun in 1959 will extend the four-lane pavement to a total of eighteen miles when completed in 1960, and will include a structure at the north entrance to Orillia. The Huntsville By-pass was opened to traffic in November of 1959. This by-pass consists of five and a half miles grading, two railway overhead structures, the Vernon Narrows bridge and a bridge over the Big East River. Work was begun on a new structure at the Magnetawan River at Katrine. This structure is part of a regrading project that will proceed in 1960 to rebuild Highway 11 from Katrine northerly ten miles.

Work on the Trans-Canada portion of Highway 69 continued through the season. The rebuilt section of Highway 69 from Shawanaga River northerly 8.5



Huntsville by-pass on Highway 11. Contract 57-32, Huntsville District.



Mulch motor power on Highway 118 east of Bracebridge by-pass. Day Labour, Huntsville District.

miles was paved. The Shawanaga River bridge was completed and opened to traffic in October 1959. Granular base was placed in the grade from Shawanaga River southerly to Nobel and this section was opened to traffic as a gravel road in December 1959. It will be paved in 1960. The Seguin River bridge in Parry Sound was relocated and rebuilt using a light-weight concrete deck. This bridge was opened to traffic in November 1959.

Granular base and base course payment was placed on Highway 400 from Highway 93 Craighurst, northerly to Highway 12 Coldwater. This portion of Highway 400 was opened for traffic in December 1959. The paving is to be completed in 1960.

Highway 121 was rebuilt and paved from Minden to Haliburton, a total distance of fourteen and one half miles, including a new structure at Kashagawigamog Lake known locally as the Allsaw bridge. When originally designed this project included limited sub-excavations for frost treatment and paving. The road performance through the winter of 1958-59 indicated the necessity for major frost treatment and as a result the finished project approached that of a grading operation.

Grading in the Bicroft area on Highway 109, Crowe River to the Dyno Mines and Highway 111, Highland Grove to Highway 109 was completed in 1959.

Regrading of Highway 118 Bracebridge westerly 4.5 miles started in 1959 and will be completed early this coming year.

Events of major interest were the opening of Highway 400 to Highway 12 and the opening of the Huntsville By-pass. The value of each will not be fully realized until after the summer tourist traffic season of 1960.

Maintenance

Approximately eight miles of shoulder stabilization was completed on Highway 11, north of Bracebridge. The shoulders in this section had previously required continual maintenance due to unstable material and low bearing capacity. Clay was added to the shoulders at a rate of approximately 50 cubic yards per mile on each side and mixed into the existing shoulder material with a pulvimixer. Shoulders were then graded, watered and rolled. The work was done in the fall with apparent good results.

As a result of seven miles of new four-lane undivided highway from Crown Hill north on Highway 11 a new pattern of zone painting was introduced in this district. A directional dividing line consisting of two solid white lines separated by a space of 2 feet which was cross hatched at a 45° angle with bars 12" wide painted at intervals of 50 feet.

A new method for brush control was tried out on Highway 103 south of Footes Bay. It consisted of scattering little pellets over the area which the rains would dissolve and the resulting solution would kill the brush by attacking the roots. Results should be in evidence this coming year.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
11	Road allowance between Cons. 8 and 9, Twp. of Oro to South Orillia By-pass Interchange (Hwy. 12 T.C.H.).....	8.63	1959	.....	5.19
11	North Orillia entrance.....	3.42	1959	.....	0.85
11	Hwy. 400 to road allowance between Cons. 8 and 9, Twp. of Oro.....	6.87	1958	0.41	6.46
109	Dyno Mines to Monck Lake.....	4.40	1958	1.94	2.46
109	Crowe River to Monck Lake.....	4.85	1957	3.78	1.07
111	Monck Lake to Highland Grove.....	5.90	1957	4.34	1.56
118	Bracebridge westerly.....	4.46	1959	.....	1.38
121	Minden to Haliburton.....	14.55	1958	3.66	10.89
400	Coldwater south.....	7.00	1958	5.00	2.00
35	7.5 mi. north of Dorset to 7.9 mi. north of Dorset.....	0.40	1959	.....	0.40
109	Jct. Hwys. 109 and 500.....	6.00	1958	.....	4.00
124	McKellar, 2.5 mi. northerly (day labour)....	12.00	1958	.....	2.50
501	Jct. Hwys. 103 and 501 (Port Severn), 0.3 mi. westerly (day labour).....	0.30	1958	.....	0.30
514	Jct. Hwys. 514 and 60 to Interlaken (day labour).....	10.00	1959	.....	0.30
518	6 mi. east of Jct. Hwys. 69 and 518 to 7.4 mi. east of Jct. Hwy. 69 (day labour)....	12.00	1955	4.1	1.40
532	Lone Pine to Patterson's Corners (day labour).....	8.00	1958	.....	1.00
532	Shadow River to Whitefish Lake (day labour).....	5.50	1958	.....	1.20
	TOTALS.....	114.28		23.23	42.96



Bridge on Highway 69 (T.C.H.) east of Pointe au Baril. Contract 57-601, Huntsville District.

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
500	Irondale Diversion.....	3.6	.....	.....	3.6	24,120.00
501	Hwy. 103, 0.3 mi. west.....	0.3	.....	.....	0.3	900.00
518	6.0 mi. east Hwy. 69 to 7.0 mi. east Hwy. 69.....	1.0	.....	.....	1.0	12,274.50
532	Shadow River to Whitefish Lake.....	5.6	1959	.....	1.2	1,800.00
532	Falkenburg, 1 mi. north.....	1.0	.....	.....	1.0	3,752.00
12 T.C.	Coldwater By-pass.....	13.80	1959	.....	11.59	217,049.41
109	Crowe River to Monck Lake....	4.85	1958	3.78	1.07	86,170.20
111, 500	Monck Lake to Highland Grove.....	5.90	1958	4.34	1.56	131,572.30
109, 111	Dyno Mines to Monck Lake....	4.40	1958	1.94	2.46	119,965.93
118	Bracebridge westerly.....	4.46	1959	.....	3.57	125,421.28
69 T.C.	Nobel to Pointe-au-Baril.....	18.34	1959	.....	11.00	479,364.99
TOTALS.....		63.25		10.06	38.35	1,202,290.61

Granular Base Laid Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Road allowance between Cons. 8 and 9, Twp. of Oro to South Orillia By-pass.....	8.63	1959	.....	5.18	172,329.83
11	Crown Hill, 7 mi. north.....	6.87	1958	0.41	6.46	241,628.86
118	Hwy. 11 to Baysville.....	9.00	.....	.....	9.00	54,583.00
121	Minden to Haliburton.....	14.55	1958	3.66	10.89	287,710.00
121	Allsaw bridge.....	0.29	1959	.....	0.29	12,848.92
TOTALS.....		39.34		4.07	31.72	769,100.61

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
118	Hwy. 11 to Baysville.....	9.0	27,973
121	Foxes Corners to 3 mi. north of Tory Hill.....	7.0	11,968
124	McKellar to 2 mi. east of Ahmic Harbour.....	20.0	26,424
124	McKellar to Magnetawan.....	25.0	14,999
500	Tory Hill to Highland Grove.....	15.0	29,946
500	Irondale By-pass.....	3.6	26,970
501	Hwy. 103 to Honey Harbour.....	9.2	9,981
514	Hwy. 35 to Interlaken.....	10.0	9,990
532	Shadow River to Whitefish Lake.....	5.4	9,716
532	5 mi. north of Bracebridge — Secondary Hwy. 516.....	7.0	17,946
TOTALS.....		111.2	185,913

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	Crown Hill to 4 mi. north of Burks Falls.....	104.7	1,521
12 T.C.	Atherley Narrows to Midland.....	35.2	168
35	Jct. with Hwy. 11 (Huntsville) to Haliburton boundary south of Miner's Bay.....	75.0	1,056
60	Hwy. 35 to Park headquarters.....	28.4	3,698
69 T.C.	Jct. with Hwy. 11 (Gravenhurst) to Secondary Hwy. 529.....	89.0	3,165
103 T.C.	Jct. with Hwy. 12 (Waubashene) to Jct. Hwy. 69 (Footes Bay)....	31.4	660
109	East Jct. Hwys. 111 and 109 to Cardiff.....	4.9	36
111	Jct. Hwys. 500 and 111 to Dyno Mines.....	7.6	61
118	Jct. Hwy. 35 (Dorset) to Jct. Hwy. 69 (Glen Orchard).....	55.6	2,137
121	Kinmount to Tory Hill.....	42.0	344
124	Jct. Hwy. 69 (Parry Sound) to Jct. Hwy. 510 (Magnetawan).....	41.5	10,296
400	Craighurst to Coldwater.....	12.4	18
500	Kinmount to Hastings County boundary.....	52.1	217
501	Jct. Hwy. 103 to Honey Harbour.....	9.2	3,036
514	Jct. Hwys. 35 and 60 to Interlaken.....	10.0	4,676
516	Jct. Hwy. 11 to Windermere.....	15.7	42
518	Hwy. 69 to Kearney.....	46.0	7,627
519	Redstone Lake to Hwy. 121.....	33.6	7,681
520	Jct. with Hwy. 11 to Ardbeg.....	33.7	4,484
525	Gravenhurst to Gravenhurst Sanatorium.....	1.7	164
527	Huntsville to Baysville.....	17.0	69
529	Jct. Hwy. 69 to Bayfield Inlet.....	2.8	60
530	Carnarvon to Secondary Road 519.....	12.5	5,075
532	Jct. Hwy. 69 to Jct. Hwy. 11.....	43.2	1,467
TOTALS.....		805.2	57,758

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Crown Hill, 7 mi. north.....	7.00	1958	.....	7.00	2,171.51
11	Huntsville By-pass.....	5.88	1959	.....	.....	1,136.38
12	Coldwater By-pass and south..	13.80	1958	.....	.....	1,487.94
69	Seguin River bridge.....	0.10	1959	.....	.....	7.32
69 T.C.	Nobel to Pointe-au-Baril.....	18.34	1959	.....	.....	1,565.65
121	Minden to Haliburton.....	14.55	1958	.....	14.55	1,544.71
TOTALS.....		59.67	.....	.....	21.55	7,913.51



Grading on Highway 532 west of Rosseau. Day labour, Huntsville District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Cu. Yds. Sand Used 1959-60
69	Shawanaga C.N.R. Crossing to Carling Turn.....	8.3	25,078	551.1
109	East Jct. of Hwys. 111 and 109 to Hasting County boundary.....	4.85	18,130	250.0
121	Foxes Corners, 6.5 mi. easterly.....	6.5	17,875	318.5
124	McKellar to Magnetawan.....	20.0	55,000	998.3
500	Irondale, 4.1 mi. easterly.....	4.1	11,275	200.0
500	Tory Hill to Hastings County boundary.....	16.0	44,000	793.0
501	Jct. Hwys. 103 and 501 to Honey Harbour.....	8.4	23,790	454.4
514	Jct. Hwys. 60 and 35 to Interlaken.....	10.0	25,012	470.0
518	Hwy. 69 to Sprucedale.....	32.6	89,233	1,627.3
519	Eagle Lake to Redstone Lake.....	4.1	11,275	205.0
519	1.5 mi. south of Haliburton to Hwy. 121.....	19.4	53,350	970.0
520	Dunchurch to Ardbeg.....	16.5	44,335	768.1
520	Magnetawan to Jct. of Hwys. 520 and 124.....	1.9	4,655	98.5
529	Hwy. 69 to Bayfield Inlet.....	3.0	5,907	80.9
530	Hwy. 35 to Jct. of Secondary Road 519.....	12.0	33,000	597.0
532	2 mi. west of Rosseau to 7.5 mi. west of Rosseau.....	5.5	16,775	294.7
TOTALS.....		173.15	478,690	8,676.8

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1959-60	Tons Placed 1959-60
11	Burks Falls to district boundary, District 11.....	1	1,600
60	Algonquin Park gate to Algonquin Park headquarters.....	2	3,000
520	Purks Falls to Magnetawan.....	3	4,500
TOTALS		6	9,100

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
Old 69	Carling Twp. Road to Jct. New and Old Hwy. 69, Shawanaga.....	12.0	.....	4.0	6,260
118	Hwy. 11 to Baysville.....	9.0	.....	9.0	14,175
121	Foxes Corners to Tory Hill.....	7.0	.....	7.0	11,000
500	Tory Hill to Highland Grove.....	15.0	.....	15.0	23,625
501	Jct. of Hwys. 103 and 501 to 0.3 mi. west. Twp. of Macaulay.....	0.3	.....	0.3	495
	Twp. of Muskoka.....	.....	.....	1.0	1,500
	Twp. of McLean.....	.....	.....	2.0	3,000
	Twp. of Monck.....	.....	.....	1.0	1,500
	Twp. of Watt.....	.....	.....	1.0	1,500
	Twp. of Stanhope.....	.....	.....	1.0	1,500
	Twp. of Sherborne.....	.....	.....	1.0	1,500
	Twp. of Carling.....	.....	.....	3.0	4,500
TOTALS.....		43.3	.....	46.3	72,055

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
121	Tory Hill to 3.5 mi. north.....	3.5	8,750	385
500	Tory Hill to 5 mi. west of Gooderham.....	12.0	31,000	1,320
518	Sprucedale to Emsdale.....	7.1	17,750	781
519	Haliburton to Eagle Lake.....	8.9	22,250	979
532	Hwy. 69 to 4.1 mi. east of Hwy. 69.....	4.1	10,250	451
532	Rosseau to Shadow River.....	2.6	6,500	176
532	Jct. Hwy. 516 to 7 mi. west of Jct. Hwy. 516.....	7.0	18,476	884
TOTALS.....		45.2	114,976	4,976

Bridges Built

Hwy. No.	Location	Work Begun	Opened to Traffic	Type of Structure
11	Huntsville By-pass.....	1957	1959	Deck girder
11	Huntsville By-pass.....	1957	1959	Deck girder
11	Lot. 8, Con. 1, Twp. of Chaffey.....	1958	1959	Deck girder
11	Vernon Narrows, Huntsville By-pass.....	1957	1959	Deck girder
69 T.C.	Shawanaga River bridge, I.R. 17 and 15, Con. 8, Twp. of Shawanaga.....	1958	1959	Deck girder
69 T.C.	Lot 1, Con. 1, Twp. of Carling.....	1957	1959	Deck girder
69	Town of Parry Sound.....	1959	1959	Deck girder
103 T.C.	Severn River, Lot. 18, Con. 12, Twp. of Tay....	1957	1959	Deck girder
103 T.C.	Severn River, Twp. of Baxter.....	1957	1959	Deck girder
103 T.C.	Severn River, Twp. of Baxter.....	1957	1959	Deck girder
103 T.C.	Moon River, Twp. of Gibson.....	1958	1959	Overhead truss
121	Allsaw bridge, Twp. of Minden.....	1958	1959	Deck girder
400	Coldwater bridge, Twp. of Medonte.....	1958	1959	Deck girder
TOTAL — 13				

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
12	C.N.R.	Simcoe east, Tay Twp.....	2 flash. lights, bell
532	C.N.R.	Muskoka, Macaulay Twp.....	2 flash. lights, bell

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
60	Dwight, Twp. of Franklin.....	Salt storage	1959	March 1960
121	Haliburton, Twp. of Dysart.....	Salt storage	1959	March 1960
121	Tory Hill, Twp. of Monmouth.....	Equipment storage	1959	March 1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		453	178.2
Development roads built.....			3.0
Off-road parks maintained.....	4		
Roads snowploughed and kept open, King's Highways.....	12		559.6
Roads snowploughed and kept open, Secondary Highways.....	10		279.1
Routine maintenance, King's Highways.....			559.6
Routine maintenance, Secondary Highways.....			279.1
Salt for de-icing roads (raw).....		5,806.5	233.0
Salt in sand, stockpiled.....		3,643	
Sand for winter maintenance.....		105,030	
Scale houses maintained.....	2		
Seeding by department's forces..... (sq. yds.)	1,645,600		
Shrubs received and planted this year.....	170		
Signs erected or replaced.....	5,268		
Snow fence erected, dismantled, stored.....			71.6
Traffic lights installed this year.....	2		
Weed control.....			658.4
Zone painting on King's Highways.....			503.0
Zone painting on Secondary Highways.....			140.0



Bridge on Highway 11 over Severn River. Contract 57-85, Huntsville District.

DISTRICT No.13—NORTH BAY**J. D. FOSTER, P.Eng., District Engineer****Construction**

During 1959 the Callander By-pass was completed and opened to traffic. Included in this 2.4 mile section are two railway overhead structures.

Sharpes Creek bridge at Rutherglen, Highway 17, was also completed during this year.

In addition 6 miles of grading and paving were begun on Highway 17 from Chalk River to Deep River.

At Rysmer Creek, Highway 17, the installation of a 180 inch multiplate pipe was completed with partial completion of 0.5 miles of grading.

Between Highway 94 and Secondary Highway 531, on Highway 17, 8 miles of grading, culverts, granular base and structures were also begun.

Seven miles of hot mix paving on Highway 17 between Highway 11 and Highway 94 were completed. On Highway 11 from Sundridge to 8 miles south, grading, granular base and hot mix paving was begun.

Highway 11 from 2 miles north of Powassan to the north end of the Callander By-pass was hot mix paved. Included in this contract was the paving of the township road, from Highway 11 to Astorville. Total mileage paved under this contract was 16 miles.

Hot mix paving was commenced on Highway 11 from the north end of the Callander By-pass to the west end of the North Bay By-pass. This work included the paving of Dev. Road 493, 2 miles in length. Total mileage to be paved under this contract is 13 miles.



C.N.R. overhead, Callander by-pass. Contract 58-17, North Bay District.

Pre-contract grubbing was completed by day labour forces on Highway 11, from Sundridge, 8 miles south. Pre-contract clearing was completed by day labour forces on Highway 11, from Sundridge north 13 miles. Grading of 0.75 miles of Highway 124, from 0.5 miles west of Highway 11, westerly, was completed by day labour forces.

Maintenance

The following work was carried out by maintenance day labour forces: 7 miles of granular lift, 10.5 miles of mulch, 48 miles of prime dust layer, and 22 miles of surface treatment. This included 10 miles using rubberized emulsion on an experimental section.

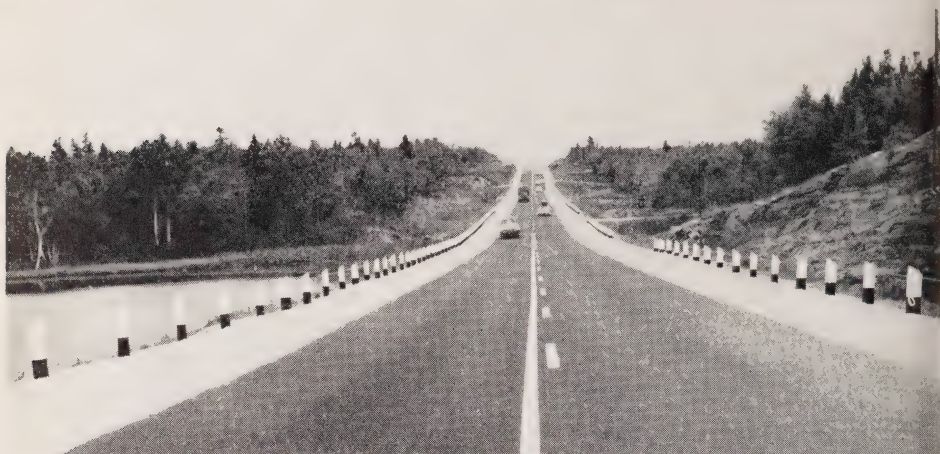
45,000 cubic yards of sand was screened for winter maintenance by the district screening plant. 77 miles of mulch was laid by moto-paver on Highway 124. The erection of a concrete culvert to replace the timber bridge over Boom Creek in Mattawa was begun and will be completed this year. Three frame buildings, salt storage sheds at Klocks and Stonecliffe, and a tool and lunch shed at Sturgeon Falls, were completed this year.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
11	8 mi. south of Sundridge to 1 mi. north of Sundridge.....	9.07	1959	.....	.....
11	Callander Diversion.....	2.40	1958	1.50	.90
17 T.C.	Jct. Hwy. 94 to Jct. Sec. Rd. 531.....	8.20	1959	.....	6.10
17 T.C.	Sharpes Creek bridge at Rutherglen.....	0.80	1959	.....	0.80
17 T.C.	Deep River to Chalk River.....	6.21	1959	.....	6.21
17 T.C.	14 mi. east of Mattawa (Rysmer Creek)....	0.20	1959	.....	0.20
17 T.C.	4 mi. west of Point Alexander to 4.75 mi. west.....	0.75	1958	0.56	0.19
124	Jct. Hwy. 11 to 3 mi. west.....	3.00	1959	.....	1.00
522	Commanda to 1.5 mi. west.....	1.50	1958	0.50	1.00
522	3 mi. west of Farleys Corners to 4 mi. west.....	1.00	1959	.....	1.00
535	Hagar to St. Charles.....	1.60	1958	0.80	0.80
535	Village of St. Charles.....	0.60	1959	.....	0.30
TOTALS.....		35.33		3.36	18.50

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Callander Diversion.....	2.40	1958	1.50	0.90	101,551
11 T.C.	Hwy. 17 to Fisher St. entrance.....	0.50	1959	.....	0.50	42,734
17 T.C.	Corbeil Corners, Jct. Hwy. 94 to Bonfield Corners, Jct. Hwy. 531.....	8.20	1959	.....	0.30	151,625
17 T.C.	Sharpes Creek bridge at Rutherglen.....	0.80	1959	.....	0.80	4,140
17 T.C.	Rysmer Creek, 14 mi. east of Mattawa.....	0.20	1959	.....	0.20	6,867
17 T.C.	Deep River to Chalk River.....	6.21	1959	.....	6.21	83,987
124	Jct. Hwy. 11 to 3 mi. west.....	3.00	1959	.....	1.00	8,250
522	Commanda to 1.5 mi. west.....	1.50	1958	0.50	1.00	3,144
533	Hagar to St. Charles.....	1.60	1958	0.80	0.80	67,879
TOTALS.....		24.41		2.80	11.71	470,177



Hot mix paving on Highway 17 near North Bay by-pass. Contract 59-38, North Bay District.

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Callander north limits to Jct. Hwys. 17 and 17B (Duchess-nay Creek).....	11.30	1959	.....	11.30	49,013
11	2.5 mi. north of Powassan to south limits of Callander.....	7.50	1959	.....	7.50	54,977
17 T.C.	4 mi. west of Point Alexander to 4.75 mi. west.....	0.75	1959	.....	0.75	52,254
533	4 mi. north of Mattawa for 5 mi.....	5.00	1959	.....	5.00	26,992
	TOTALS.....	24.55		.....	24.55	183,236

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	2.5 mi. north of Powassan to Hwy. 17B.....	21.25	111,530
17 T.C.	North Bay By-pass to Bonfield Corners.....	14.82	75,156
17 T.C.	Sharpes Creek bridge.....	0.20	1,303
17 T.C.	Rysmer Creek culvert (14 mi. east of Mattawa).....	0.26	1,900
17 T.C.	Deep River to Chalk River.....	6.21	13,917
64	Field to Rutter.....	55.00	25,500
124	3 mi. west of Hwy. 11 to Jct. of Sec. Rd. 510.....	9.00	17,000
522	Trout Creek to Jct. of Sec. Rd. 524.....	17.00	45,000
533	Mattawa to Jct. of Hwy. 63.....	30.00	20,000
528	Hwy. 64 to Wolesley Bay.....	7.00	7,000
528A	Wolesley Bay to Pine Cove.....	2.00	1,000
535	Hagar to Noelville.....	20.00	26,000
539	River Valley to Warren.....	16.00	15,000
607	Jct. of Hwy. 64 to French River station.....	8.00	2,800
607A	Bigwood to Hwy. 69.....	0.50	200
	TOTALS.....	207.24	363,306

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	4 mi. north of Burks Falls to Temagami.....	121	1,005
17 T.C.	Pembroke to Hagar.....	179	2,968
63	North Bay to Temiskaming.....	40	492
64	Rutter to Marten River.....	85	16,934
124, 510	Hwy. 11 to Magnetawan.....	15	4,552
522	Trout Creek to Loring.....	38	30,621
524	Sec. Rd. 522 to Sec. Rd. 534.....	2	1,600
533	Sec. Rd. 522 to Sec. Rd. 534.....	.....	2,080
534	Powassan to Restoule.....	23	1,039
535	Veuve River to Noelville.....	31	5,874
539	Warren to Field.....	26	330
TOTALS.....		560	67,495

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	2 mi. north of Powassan to Hwy. 17B.....	21.25	1959	.....	14.75	78,480.00
17 T.C.	Chalk River to Deep River.....	6.21	1959	.....	.....	11,700.00
17 T.C.	Corbeil Corners to North Bay By-pass.....	6.65	1959	.....	6.65	18,545.70
17 T.C.	Intsec. Hwys. 17 and 17B to Hagar.....	1.65	1959	.....	1.65	2,658.14
17 T.C.	Sharpes Creek bridge.....	0.20	1959	.....	0.20	633.94
17B	North Bay limits to Hwy. 17....	0.96	1959	.....	0.96	2,228.00
TOTALS.....		36.92	.....	.....	24.21	114,245.78

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
64	Field northerly.....	14	47,600	1,470
24	Hwy. 522 to Hwy. 534.....	3	10,200	315
34	Powassan limits to Restoule.....	21	71,400	2,205
39	Field to River Valley.....	10	34,000	1,050
TOTALS.....		48	163,200	5,040

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Sullivan's Swamp.....	1.0	.....	1.0	3,000
64	Field to 3 mi. south.....	3.0	.....	3.0	4,500
35	3 mi. south of Hagar for 2 mi.....	2.7	.....	2.7	5,300
24	Jct. of Hwys. 124 and 510 easterly.....	7.7	.....	7.7	11,594
22	½ mi. west of Hwy. 524 for 5 mi.....	5.0	.....	5.0	7,500
22	At Commanda, 2 mi.....	2.0	.....	2.0	3,000
TOTALS.....		21.4	.....	21.4	34,894



Grading along Highway 522 west of Commanda. Day labour, North Bay District.

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
11	2½ mi. north of Powassan to 4.7 mi. north.....	2.2	6,380	286
64	6 mi. north of Sturgeon Falls to 11 mi. north.....	5.0	14,500	650
17 T.C.	Sullivan's Swamp.....	2.0	5,800	260
124	Grindstone Hill.....	2.7	7,830	351
522	10.2 mi. east of Loring to 15.2 mi. east.....	5.0	14,500	650
	Various locations.....	5.3	15,370	689
TOTALS		22.2	64,380	2,886

Bridges Built

Hwy. No.	Location	Work Begun	Opened to Traffic	Type of Structure
11	C.N.R. overhead, Callander By-pass.....	1958	1959	Structural steel girder
11	C.N.R. overhead, Callander By-pass.....	1958	1959	Rigid frame
17 T.C.	Sharpes Creek, Rutherglen.....	1959	1959	Rigid frame, structural steel

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights, Bell and Short Arm
94	C.N.R.	East Ferris.....	X

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
17	Klocks	Salt storage	1959	1959
17	Stonecliffe	Salt storage	1959	1959
17	Sturgeon Falls	Tool and lunch shed	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		646	160.3
Calcium for de-icing roads		93	
Off-road parks maintained	8		
Roads snowploughed and kept open, King's Highways.....	6		446
Roads snowploughed and kept open, Secondary Highways	12		184.5
Roadside picnic places maintained.....	57		
Routine maintenance, King's Highways...			448.4
Routine maintenance, Secondary Highways...			184.5
Salt for de-icing roads (raw).....		4,618	448.4
Salt in sand, stockpiled.....		331	
Sand for winter maintenance.....		65,194	
Scale houses maintained.....	4		
Seeding by department's forces.....(sq. yds.)	261,360		
Signs erected or replaced.....	4,886		
Snow fence erected, dismantled, stored...			49.8
Weed control.....			6.2
Zone painting on King's Highways.....			451.9
Zone painting on Secondary Highways..			58.0



Grading, junction of Highways 17, 94 and 531. Contract 59-65, North Bay District.



Bridge construction at Latchford. Contract 58-645, New Liskeard District.



Road building on Highway 66 at King Kirkland. Contract 58-08, New Liskeard District.

DISTRICT No. 14—NEW LISKEARD**R. S. CHAPMAN, P.Eng., District Engineer****Construction**

Paving was completed in 1959 on new Highway 11 from Matheson to Monteith and grading was completed from Monteith to Porquis Junction. This section will be paved in 1960.

A great deal of difficulty was experienced in placing a fifteen-foot multiplate culvert at Meadow Creek on this road due to soft material. The difficulty was finally overcome by increasing the width of the fill with berms and sub-excavating three feet under the culvert and backfilling with two feet of sand and one foot of crushed gravel.

New bridges were completed and opened to traffic on old Highway 11 over the Driftwood River at Monteith and on Secondary Highway 629 over Kraft Creek in Mountjoy Township.

Ten miles of road were built west of Foleyet towards Chapleau under the Resources Road Program. Day labour clearing on this road was completed from mileage 15 to mileage 29.

Maintenance

The winter of 1958-59 was quite severe, setting in about the end of November of 1958. The snowfall was steady and there were few storms until March 1959, when we had four of about eight inches each. The spring of 1959 was cool and dry and the summer hot and dry until the end of July 1959; from then on it was cool



Foleyet Resources Road, west of Foleyet. Contract 59-140, New Liskeard District.

with considerable precipitation followed by an unusually wet September and October. Winter set in early, snow being here to stay about November 15 on unfrozen ground. The winter of 1959-60 saw unusually heavy snowfall, with many severe storms and high winds, adding up a total snowfall of ten to eleven feet. Salting and ploughing costs were heavier than average as a result.

Priming and surface treatment operations progressed favourably and the summer was very favourable for mulching operations.

New mulch pavement was laid on Highway 66 toward Elk Lake over 10 miles, east of Highway 101 from Perry Lake for 5.5 miles and west on Highways 101 and 616 for 5 miles.

Calcium chloride was applied in solution over 128 miles of Secondary Highways and in flake form over 40 miles.

Handrails on all steel bridges in the district were painted. Zone painting was carried out by district forces using district equipment on 333 miles of King's Highways and 15 miles of Secondary Highways. In addition this district's crew and equipment were on loan to Cochrane district.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
11	Porquois Jct. southerly.....	8.0	1957	5.2	2.8
66	5.2 mi. east of Kirkland Lake, easterly 3.25 mi.....	3.25	1958	2.67	.58
66	Kirkland Lake easterly.....	5.34	1958	.48	4.0
66	8.5 mi. east of Kirkland Lake, easterly 6.06 mi.....	6.06	1959	.....	3.0
	Foleyet to Chapleau (day labour clearing and equipment rental, grading).....	30.0	1959	.....	10.0
	TOTALS.....	52.65		8.35	20.38

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Montreal River bridge to Latchford.....	0.35	1959	.....	.02	2,599
11A	Porquis Jct. southerly.....	8.0	1957	7.5	0.5	21,999
66	5.2 mi. east of Kirkland Lake, easterly 3.25 mi.....	3.25	1958	2.67	0.58	11,382
66	Kirkland Lake easterly.....	5.34	1958	.....	5.14	36,727
66	8.5 mi. east to Kirkland Lake east.....	6.06	1959	.....	3.4	15,208
	TOTALS.....	23.00		10.17	9.64	87,915

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Earlton southerly.....	9.44	1959	.....	8.40	89,000

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	Matheson northerly.....	9.3	41,184
11	Porquis Junction southerly.....	8.0	3,925
11	New Liskeard to Earleton.....	19.32	89,040
65	Elk Lake easterly 6 mi.....	6.0	12,000
66	5.2 mi. east of Kirkland Lake easterly 3.25 mi.....	3.25	11,382
66	Kirkland Lake easterly 8.6 mi.....	8.6	8,703
66	From 8.5 mi. east of Kirkland Lake easterly 6.06 mi.....	6.06	15,208
101	Garrison Creek easterly.....	12.0	15,000

Secondary Roads

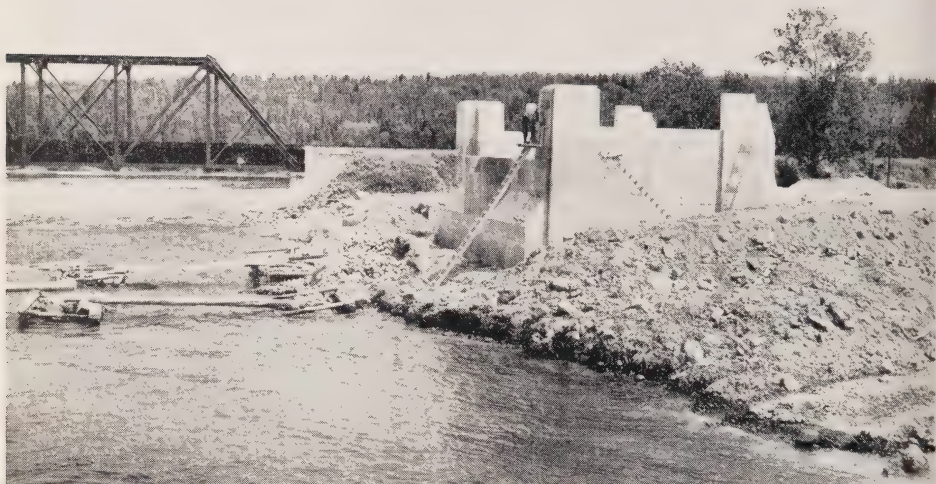
560	Shiningtree to Westree.....	19.0	20,000
560	Elk Lake easterly.....	10.0	10,000
577	Monteith to Shillington.....	7.5	10,000
616	Sec. Hwy. 616 to Foleyet.....	12.0	18,000
629	Timmins limit to airport.....	.....	14,000
TOTALS.....		121.03	268,442

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	Various sections.....	12	9,542
65	16 mi. west of New Liskeard to Elk Lake.....	43	43,885
66	Various sections.....	27	3,042
67	Various sections.....	4	528
101	Timmins westerly and from Matheson to Quebec boundary.....	53	6,900
558	Various sections.....	8	2,593
560	Throughout.....	130	49,720
562	Throughout.....	8	25,476
564	Various sections.....	5	616
566	2 mi. west of Matachewan to Floating Bridge.....	9	504
567	Various sections.....	7	610
568	Throughout.....	.....	15
569	Throughout.....	17	14,870
570	Various sections.....	1	32
571	Throughout.....	3	115
572	Various sections.....	2	200
573	Various sections.....	1	18
577	Various sections.....	10	7,365
610	Throughout.....	10	10,200
616	Various sections.....	12	3,100
629	Throughout.....	6	2,200
TOTALS.....		368	181,531

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Matheson northerly.....	9.3	1958	9.3	9.3	11,612
11	New Liskeard to Earleton.....	19.32	1959	....	4.2	11,021
66	Kirkland Lake easterly 8.6 mi... ..	8.6	1959	....	3.25	9,688
TOTALS.....		37.22		9.3	16.75	32,321



Montreal River bridge construction on Highway 11 at Latchford. Contract 58-645, New Liskeard District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
65	Elk Lake easterly.....	16.6	50,100	1,240
66	Hwy. 11 westerly.....	12.6	41,340	870
569	Hwy. 11 easterly.....	5.6	17,300	420
572	Hwy. 11 to Holtvre town site.....	5.0	15,500	340
TOTALS.....		39.8	124,240	2,870

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1959-60	Tons Placed 1959-60
11	New Liskeard to Earleton.....	10	9,176

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Hwy. 67 at Porquis northerly.....	.....	.....	0.7	1,200
67	Hwy. 67 at Porquis southerly.....	.....	.....	1.0	1,850
65	15 mi. west, 26 mi. west of New Liskeard....	10.5	.....	10.5	17,500
101	Perry Lake to Twin Lakes.....	5.7	.....	5.7	8,550
101	Star Lake to Warren Lake.....	2.0	.....	2.0	3,000
616	Warren Lake westerly.....	2.7	.....	2.7	2,520
TOTALS.....		20.90	.....	22.6	34,620

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
65	8 mi. to 17 mi. west of New Liskeard.....	8.4	25,500	600
101	Johns-Manville Road to Perry Lake.....	8.3	25,000	600
101	Cripler Creek westerly.....	3.3	10,000	210
TOTALS.....		20.0	60,500	1,410

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Driftwood River bridge at Monteith.	1958	1959	Structural steel and rein- forced concrete
629	Mountjoy Twp.....	1959	1959	Laminated timber trestle. Composite deck
TOTAL — 2				

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted (handrails only).....	28		
Calcium dust layer on gravel roads.....		493	168
Development roads built.....			16
Roads snowploughed and kept open, King's Highways.....	5		434
Roads snowploughed and kept open, Secondary Highways.....	18		344
Roadside picnic places maintained.....	27		
Routine maintenance, King's Highways.....			434
Routine maintenance, Secondary Highways.....			347
Salt for de-icing roads (raw).....		5,521	450
Salt in sand, stockpiled.....		613	
Sand for winter maintenance.....		17,300	
Scale houses maintained.....	2		
Seeding by department's forces.....(sq. yds.)	270,000		
Signs erected or replaced.....	1,500		
Snow fence erected, dismantled, stored.....			86
Weed control.....			540
Zone painting on King's Highways.....			333
Zone painting on Secondary Highways.....			15



Aide Creek roadside park on Highway 11 north of Englehart, New Liskeard District.



Magagami River bridge on Highway 11 west of Hearst. Contract 56-144, Cochrane District.



Wicklow River bridge construction on Highway 11. Contract 58-14, Cochrane District.

DISTRICT No. 16—COCHRANE**E. H. JONES, P.Eng., District Engineer****Construction**

Reconstruction of Highway 11 in the Kapuskasing, Hearst and Cochrane areas progressed favourably. Three grading contracts were awarded between Kapuskasing and Hearst and all of Highway 11 between these two points has been either reconstructed or is under contract.

The department's paving plant continued operations and 31.5 miles of base course pavement and 1 mile of top course pavement was placed on completed grading contracts.

In the fall of the year construction of two bridge structures at Kapuskasing and a bridge across the Missinaibi River at Mattice was started. Completion of both structures is expected by the fall of 1960.

Maintenance

The Caramat Secondary Highway 625, constructed by the Department of Highways forces, Fort William District, was taken over by this district for maintenance purposes on August 1st, 1959. Two creosoted timber culverts were constructed and one hundred and thirty-seven warning signs erected over the entire twenty mile section.

Extensive repairs were made to the Frederickhouse River bridge and an experiment of re-decking the Pitopiko and Fraser River bridges, with wire mesh and iron bars covered with an asphalt mulch, appears quite effective.

Some 203 acres of highway right-of-way were seeded and mulched, throughout the district and extensive grading, trimming and seeding of slumped slopes in the Klotz Lake area, east of Longlac, were carried out during the summer of 1959. Good results are expected.

A new axle loading scale and scale house was installed at Hearst, but not



Grading on Highway 11 south of Cochrane. Contract 58-14, Cochrane District.

completed, during the late fall and early winter, by Department of Highway forces. The project is expected to be completed in early summer.

Landscaping and paving of the new seven-bay district office, Cochrane, began late in 1958, was completed, thus giving the surrounding area a neat and pleasant appearance.

Two new 8-10 ton snow-plough trucks, one 6 ton snow-plough truck and a heavy-duty rubber-tired loader, were received during 1959, and all proved very useful to the district maintenance organization.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
11	2 mi. south of Driftwood to 3 mi. north....	4.6	1957	1.8	2.8
11	Kapuskasing to Harty.....	10.3	1958	9.3	1.0
11	Cochrane southerly.....	10.0	1958	6.0	4.0
11	Harty to Opasatika.....	8.24	1958	6.2	2.04
11	Opasatika to Lowther.....	9.98	1958	5.4	2.58
11	Lowther to Mattice.....	10.12	1959	.....	8.0
11	Mattice westerly.....	9.87	1959	.....	7.0
TOTALS.....		63.11		28.70	27.42

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Hunta Diversion.....	7.66	1958	7.0	.66	109,866
11	Kapuskasing to Harty.....	10.3	1958	8.6	1.7	627,575
11	Harty to Opasatika.....	8.24	1958	6.0	2.24	710,017
11	Opasatika to Lowther.....	9.98	1958	1.0	5.98	643,354
11	Lowther to Mattice.....	10.12	1959	.....	5.0	847,368
11	Mattice westerly.....	9.87	1959	.....	5.8	328,616
11	Cochrane southerly.....	10.0	1959	.....	9.5	813,964
583, 11	Town of Hearst.....	1.17	1959	.....	1.17	51,952
11	2 mi. south to 3 mi. north of Driftwood.....	4.58	1959	.....	4.58	498,005
TOTALS.....		71.92		22.60	36.63	4,630,717



Grading near Driftwood on Highway 11. Contract 57-87, Cochrane District.



New bridge on Highway 11 at Smooth Rock Falls. Contract 56-36, Cochrane District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	2 mi. south to 3 mi. north of Driftwood.....	5	60,953
11	3 mi. north of Driftwood, westerly.....	5	2,655
11	Kapuskasing to Harty.....	10	72,834
11	Cochrane southerly.....	10	41,414
11	Harty to Opasatika.....	8	27,911
11	Hunta Diversion.....	7.8	44,928
11	Smooth Rock Falls.....	2.4	16,441
11	Lowther to Mattice.....	10	11,704
11	Town of Hearst.....		27,700
11	Cochrane to Porquis Jct.....	33	15,000
11	Strickland to Moonbeam.....	20	9,835
574	Cochrane to Norembega.....	18	9,999
579	Cochrane to Gardiner.....	18	10,000
Development Road			
583	Hearst to Meade.....		10,000
TOTALS.....		147.2	361,374

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
11	Cochrane to Porquis.....	32.80	7,925
11	Cochrane to Smooth Rock Falls.....	40.00	2,244
11	Smooth Rock Falls to Kapuskasing.....	40.00	345
11	Cochrane to Smooth Rock Falls (shouldering).....	40.00	20,105
11	Kapuskasing to Mattice.....	40.00	20,337
11	Mattice to Hearst.....	20.00	8,115
11	Hearst to Longlac.....	134.90	8,265
574	Cochrane to Norembega.....	18.00	2,089
578	Herman Lake to Montrock.....	6.00	1,099
579	Cochrane to Gardiner.....	18.00	2,023
581	Moonbeam to Remi Lake.....	3.50	369
583	Lac Ste. Therese to Meade.....	40.18	891
631	Jct. of Hwys. 11 and 631 to Hornepayne.....	46.00	35
TOTALS.....		479.38	73,842

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
578	Jct. of Hwy. 11 and Sec. Hwy. 578, Montrock.....	6	18,000	12,000

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
11	Smooth Rock Falls.....	0.9	1958	0.9	0.9	3,188
11	3 mi. north of Driftwood to 10 mi. east of Smooth Rock Falls.....	4.5	1959	....	(Base only)	11,471
11	Hunta Diversion.....	7.66	1959	....	(Base only)	11,119
11, 583	Town of Hearst.....	1.17	1959	....	(Base only)	3,562
11	Kapuskasing airport to Harty..	10.0	1959	....	(Base only)	15,688
11	Harty to Opasatika.....	8.3	1959	....	(Base only)	12,444
TOTALS.....		32.53		0.9	0.9	57,472

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60
67	Porquis to Iroquois Falls (pavement patches only).....	2.0	6,450
581	Moonbeam to Remi Lake.....	3.5	7,998
TOTALS.....		5.5	14,448

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	4 mi. west of Opasatika.....	1959	1959	Concrete deck on timber piles
11	East of Mattice.....	1959	1959	Concrete deck on timber piles
11	6 mi. south of Cochrane.....	1958	1959	Concrete on steel piles

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
11	West limits of the Town of Hearst.....	Weigh scales	1959	Jan. 25, 1960
11	Nagagami.....	Salt shed	1959	Dec. 20, 1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	929	210.13
Calcium for de-icing roads.....	.....	7.7	.....
Roads snowploughed and kept open, King's Highways.....	2	.....	314.50
Roads snowploughed and kept open, Secondary Highways.....	7	.....	143.63
Roadside picnic places maintained.....	10	.....	.....
Routine maintenance, King's Highways.....	.....	.....	314.50
Routine maintenance, Secondary Highways.....	.....	.....	143.63
Salt for de-icing roads (raw).....	.....	1,998.5	262.90
Salt in sand, stockpiled.....	.....	541.9	.....
Sand for winter maintenance.....	.....	14,727	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces..... (sq. yds.)	984,000	.....	.....
Shrubs received and planted this year.....	48	.....	.....
Signs erected or replaced.....	1,807	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	37.85
Weed control.....	.....	.....	135
Zone painting on King's Highways.....	.....	.....	259.40
Zone painting on Secondary Highways.....	.....	.....	3.5

DISTRICT No. 17—SUDBURY**E. A. CASH, P.Eng., District Engineer****Construction**

On Highway 17 reconstruction of the 1.96 mile section of road between Vermilion River bridge and Whitefish was begun to bring this part of Highway 17 up to Trans-Canada standards.

On Highway 68, the first 4.75 miles south of Espanola was reconstructed and opened to traffic on a vastly improved alignment. Construction south of this section for another 4.7 miles was also begun. Here, foundation difficulties were encountered at West River. The 20' x 12' concrete culvert planned for this location was replaced by a 180 " structural plate culvert. Berm construction method of rock fill was used.

On Highway 69, the reinforced concrete bridge over Magnetawan River was completed and rock excavation on the next 12.32 miles south progressed favourably. There is a severe lack of good granular deposits in this area. The 60-foot concrete arch culvert over the Harris River was also completed.

On the Secondary Highways new concrete bridges were completed at Larchwood, Levack and Markstay.



Heavy grading and rock excavation on Highway 68 south of Espanola. Contract 59-90, Sudbury District.

An "Equipment Rental" contract, 4.2 miles in length, was completed on the Burwash-Killarney road. This involved very accurate timekeeping records for both equipment and labour.

Maintenance

An extensive mulch and surface treating program was carried out by district forces. A total of 23.5 miles of mulch was laid and 31 miles of road was surface treated.

A flashing light was installed on Highway 68 at the junction of Highway 17. The intersection of Highway 17 and Secondary Highway 536 was illuminated. These are the first installations of this type in the district. The bridge at Indian Point on Secondary Highway 540 failed late in October. The old bridge was dismantled and a Bailey Bridge erected by department forces.

Two additional snow-plough trucks were received in the district and these new units speeded up our snow removal operations, especially during the early part of the winter when we had much more snow than usual.

A winter day labour program was again carried out this year. The work included clearing of brush on Highway 69, Secondary Highway 541 and pre-contract clearing on Highway 68 at Whitefish Falls and on the Killarney-Burwash Road. The placing of granular material on old Highway 17 from Whitefish to Nairn Centre, begun last year, was continued.



Rock excavation on Highway 68 south of Espanola. Contract 59-90, Sudbury District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17 T.C.	At Vermilion River to Whitefish.....	1.96	1959	.....	0.50
68	Espanola Spanish River bridge and ap- proaches.....	0.9	1958	0.45	0.05
68	Espanola southerly.....	4.75	1958	2.6	2.15
68	C.P.R. overhead bridge and approaches....	0.232	1959	.....	0.032
68	5 mi. south of Espanola southerly.....	4.7	1959	.....	1.0
69 T.C.	Magnetawan River bridge and approaches.....	0.61	1958	0.35	0.26
69 T.C.	Magnetawan River to Pointe-au-Baril.....	12.32	1958	3.8	0.2
69	Whitson Creek bridge and approaches.....	0.24	1959	.....	0.01
541	Garson to Bailey's Corner.....	3.82	1958	2.5	1.32
544	Vermilion River bridge and approaches.....	0.50	1958	0.1	0.4
544	Onaping River bridge and approaches.....	0.63	1959	.....	0.63
606	Veuve River bridge and approaches.....	0.33	1958	0.25	0.8
New Rd.	Hwy. 69 to C.N.R. tracks (Killarney Rd.)..	4.2	1959	.....	4.2
New Rd.	Killarney easterly.....	25.0	1955	13.0	3.0
	Plus 2 mi. of Borrow Pit access roads....	.....	.....	.....	2.0
	TOTALS.....	60.192		23.05	16.552

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Vermilion River to Whitefish....	1.96	1959	.....	0.50	30,360.00
68	Espanola southerly.....	4.75	1958	2.6	2.15	116,090.64
68	5 mi. south of Espanola, south- erly 4.7 mi.....	4.7	1959	.....	1.0	6,054.96
69 T.C.	Magnetawan River bridge and approaches.....	0.61	1958	0.35	0.26	4,424.00
69 T.C.	Magnetawan River to Pointe- au-Baril.....	12.32	1958	3.80	0.20	57,148.00
69	Whitson Creek bridge and ap- proaches.....	0.24	1959	.....	0.01	903.50
541	Garson to Bailey's Corner.....	3.82	1958	2.5	1.32	178,713.00
544	Vermilion River bridge and ap- proaches.....	0.50	1958	0.1	0.4	18,585.40
544	Onaping River bridge and ap- proaches.....	0.63	1959	.....	0.63	66,353.00
New Rd.	Hwy. 69 to C.N.R. tracks, (Killarney Rd.).....	4.2	1959	.....	4.2	79,648.00
New Rd.	Killarney easterly.....	25.0	1955	13.0	3.0	19,359.00
	TOTALS.....	58.73		22.35	13.67	577,639.50

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
549	Whitefish — Penage Lake, at Rat Lake.....	1.25	1959	.....	1.25	19,546.1
17	Victoria Mine to Worthington.....	0.8	1959	.....	0.8	6,876.32
	TOTALS.....	2.05		.....	2.05	26,422.42



North of Pointe au Baril on Highway 69 (T.C.H.). Bridge over Magnetawan River.
Contract 58-150, Sudbury District.



On Highway 68 at Loon Lake. Grading. Contract 58-30, Sudbury District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17	Whitefish to Nairn.....	15.6	10,001.04
17	Copper Cliff to McKerrrow.....	38.0	24,998.28
17 T.C.	Vermilion River to Whitefish.....	1.96	8,687.00
68	Spanish River bridge approaches ..	0.9	355.00
68	Espanola southerly.....	4.75	44,089.86
68	Espanola to Lewis Lake.....	24.0	20,996.85
68	Little Current to South Baymouth.....	43.0	24,987.97
69	Sudbury to Val Caron.....	7.0	14,996.95
69	Whitson Creek bridge approaches.....	0.24	365.60
540	At Moore's Corner.....		5,999.09
540	Gore Bay to Meldrum Bay.....	42.0	24,995.11
541	Garson to Bailey's Corner.....	3.82	32,004.89
542, 551	West Bay to Mindemoya to Gore Bay.....	30.0	25,096.47
544	Onaping River bridge approaches at Levack.....	0.63	5,036.00
544	Vermilion River bridge approaches at Larchwood.....	0.50	4,327.60
606	Veuve River bridge approaches at Markstay.....	0.33	2,425.57
TOTALS.....		212.73	249,363.28

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17 T.C.	Hagar to McKerrrow.....	94	2,780
68	McKerrrow to South Baymouth.....	82	28,000
69 T.C.	Jct. of Hwy. 529 to Capreol.....	87	8,800
537	Hwy. 69 to Hwy. 17.....	13	2,500
540	Gore Bay to Meldrum Bay.....	47	19,500
542	Tehkummah to Gore Bay.....	48	14,800
543	Hwy. 69 to Long Lake.....	5	1,600
544	Levack to Cartier.....	17	1,300
545	Capreol to Milnet.....	10	1,000
549	Hwy. 17 to Lake Penage.....	9	3,100
551	West Bay to Providence Bay.....	11	4,400
TOTALS.....		423	87,780

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
68	Ten Mile Point to South Baymouth.....	30.35		
542	Hwy. 68 to Gore Bay and Tehkummah.....	49.0		
549	Hwy. 17 to Penage Lake.....	9.0		
551	West Bay to Mindemoya and Sec. Rd. 542 to Providence Bay.....	11.2		
544	Levack Turn to Windy Lake Park.....	2.0		
545	Capreol to Milnet.....	10.0		
TOTALS.....		111.55	324,903	7,828.65



Bridge construction on Highway 544 over Onaping River. Detour via Bailey bridge. Contract 58-641, Sudbury District.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
544	Onaping River bridge and approaches at Levack.....	0.63	1959	.....	0.63	1,618.00
544	Vermilion River bridge and approaches at Larchwood.....	0.50	1959	.....	0.50	1,286.77
	TOTALS.....	1.13		.....	1.13	2,904.77

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
69	Sudbury northerly.....	4.50	.....	4.50	6,700
541	Garson to Bailey's Corner.....	3.82	.....	3.82	5,700
68	Little Current northerly.....	8.95	.....	8.95	13,500
540	Kagawong West to Gore Bay.....	4.60	.....	4.60	6,900
540	Gore Bay southerly.....	1.60	.....	1.60	2,400
	TOTALS.....	23.47	.....	23.47	35,200

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
68	Sheguiandah.....	6.85	20,400	760
68	Little Current northerly.....	0.90	2,700	100
68	Village of South Baymouth.....	0.90	2,700	100
540	Little Current westerly.....	20.40	61,000	2,200
540	Village of Silverwater.....	1.0	3,000	110
540	Village of Meldrum Bay.....	0.40	1,200	50
542	Village of Mindemoya.....	0.65	1,900	70
TOTALS		31.10	92,900	3,390

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
606	At Markstay, over Veuve River.....	1958	1959	Reinforced concrete
544	At Larchwood, over Vermilion River.....	1958	1959	Structural steel and reinforced concrete
544	At Levack, over Onaping River.....	1958	1959	Structural steel and reinforced concrete
540	At Indian Point, over Wolsey Channel....	1959	1959	D.S. Bailey
69	Magnetawan River.....	1958	1959	Structural steel and reinforced concrete
69	Harris River.....	1958	1959	60' arch culvert

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
536	C.P.R.	Waters.....	X
544	C.P.R.	Balfour.....	X
606	C.P.R.	Hagar.....	X

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		1,535	252
Off-road parks maintained.....	7		
Roads snowploughed and kept open, King's Highways.....			279
Roads snowploughed and kept open, Secondary Highways.....			274
Roadside picnic places maintained.....	13		
Routine maintenance, King's Highways.....			279
Routine maintenance, Secondary Highways.....			289
Salt for de-icing roads (raw).....		5,230	294
Salt in sand, stockpiled.....		1,600	
Sand for winter maintenance.....		21,400	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	140,000		
Signs erected or replaced.....	5,200		
Snow fence erected, dismantled, stored.....			79.5
Weed control.....			487
Zone painting on King's Highways.....			156
Zone painting on Secondary Highways.....			58



Bridge construction at Espanola on Highway 68. Temporary Bailey bridge over Spanish River.
Contract 57-283, Sudbury District.



Bridge construction on Highway 17 (T.C.H.) over Root River. Detour via Bailey bridge.
Contract 59-210, Sault Ste. Marie District.

DISTRICT No. 18—SAULT STE. MARIE**D. P. COLLINS, P.Eng., District Engineer****Construction**

Grading, granular base completed on 15.3 miles of improvement roads connecting Highway 108 with Can Met, Stanrock, Panel and Consolidated Dennison Mines. Grading and granular base completed on the 9.4 mile extension of Highway 129 westerly.

Grading and granular base started on 9.25 miles of Highway 17 (Trans-Canada Highway) from Sault Ste. Marie city limit north. Grading and granular base continued from previous season from 9.25 miles north to 23.88 miles north — Trans-Canada Highway.

Paving of Thessalon By-pass, Highway 17 (Trans-Canada Highway) completed for 3.26 miles. In addition, the paving of the Sauble River and Blind River structures and approaches was completed, both being Trans-Canada Highway.

The Sideburned Lake structure, Highway 129, 12 miles southwest of Chapleau was completed. Erection of structural steel on the Goulais River bridge, Highway 17 (Trans-Canada Highway) 16 miles north of Sault Ste. Marie was 85% completed. Structures under grading contracts, north of Sault Ste. Marie, Highway 17 (Trans-Canada Highway) included Root River crossings No. 1, 2, 3 and 4. These range in degree of completion from 40% for crossing No. 1 to 100% for crossing No. 4.

The major problem encountered during the year was the construction of the Havilland Bay causeway, Highway 17 (Trans-Canada Highway), 27 miles north of Sault Ste. Marie. The shear strength of the underlying clay being such that it could not offset the shear stresses of the roadway fill-rock and sand. The problem was overcome by construction beams to balance the weight of the roadway fill.

Maintenance

Two new hydraulic sanders obtained helped out considerably in the Elliot Lake — Blind River area.

The district also was supplied with a new type of hammer-knife mower which proved very useful. A new tilt-bed trailer was also of use in moving equipment.

Salt storage sheds were built at Sault Ste. Marie and Wawa.

Considerable preparation work was carried out at the site of the new garage at Sault Ste. Marie.

Patrols were established at Wawa and Agawa, in preparation for taking over the "Gap" section of Highway 17 (Trans-Canada Highway) scheduled to open in 1960.



Rock excavation on Havilland Causeway, Highway 17. Contract 58-613, Sault Ste. Marie District.



Havilland Causeway on Highway 17 (T.C.H.). Contract 58-613, Sault Ste. Marie District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17 T.C.	Sault Ste. Marie to Odena.....	3.88	1959	.....	2.4
17 T.C.	Odena to Heyden.....	5.37	1959	.....	2.5
17 T.C.	Heyden to Goulais River.....	6.77	1958	.....	6.4
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	.....	7.5
17 T.C.	Aux Sable River bridge.....	0.6	1957	0.3	0.3
129	7 mi. south of Chapleau on Chapleau Road.	9.38	1957	6.00	3.38

Development Roads

	Consolidated Dennison and Panel Mines....	6.55	1958	—	6.55
	Spanish American, Can-Met, and Stanrock Mines.....	8.73	1958	—	8.73
	TOTALS.....	49.14		6.30	37.76

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Sault Ste. Marie to Odena.....	3.88	1959	....	2.4	133,625.00
17 T.C.	Odena to Heyden.....	5.37	1959	....	2.5	3,108.00
17 T.C.	Heyden to Goulais River.....	6.77	1958	....	6.4	43,000.00
17 T.C.	Aux Sable River bridge.....	0.6	1958	.....	.06	2,182.42
129	7 mi. south Chapleau westerly.	9.38	1956	6.0	3.38	4,974.46
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	....	7.5	29,018.00

Development Roads

	Spanish American, Can-Met, Stanrock Mines.....	8.73	1958	....	8.29	201,248.40
	Consolidated Dennison, Panel Mines.....	6.55	1958	....	6.55	35,244.62
	TOTALS.....	49.14		6.0	37.08	452,400.90

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Thessalon By-pass.....	3.26	1959	.....	3.26	1,221.84

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17 T.C.	Sault Ste. Marie to Odena.....	3.88	39,655
17 T.C.	Goulais River to Havilland Bay.....	7.86	31,793
17 T.C.	Odena to Heyden.....	5.37	3,108
17 T.C.	Heyden to Goulais River.....	6.77	43,000
17 T.C.	Thessalon By-pass.....	3.26	6,749.98
17 T.C.	Aux Sable River bridge.....	0.6	3,157.03
17	Jct. of Hwy. 17 and Sec. Hwy. 563 to Montreal River.....	32.0	1,968.63
29	30 to 40 mi. north of Thessalon.....	10.0	4,976.46
29	Aubery Falls southerly.....	8.0	5,193.35
29	7 mi. south Chapleau westerly.....	9.38	6,597.31

Development Roads

	Consolidated Dennison and Panel Mines.....	6.55	38,283.13
	Spanish American, Can-Met, Stanrock Roads.....	8.73	66,721.08
	TOTALS.....	102.40	251,202.97



Surface treatment on Highway 17 (T.C.H.) 49 miles north of the Soo. Contract 59-590, Sault Ste. Marie District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17	Webbwood to Agawa.....	233	3,500
108	Hwy. 17 to Quirke Lake.....	26	50
129	Thessalon to Chapleau.....	145	4,950
546	White River Road.....	50	1,650
548	St. Joseph Island.....	36	1,350
550	Gros Cap Road.....	11	1,000
554	Parkinson Road.....	11	1,000
555	Granary Lake Road.....	7	100
556	Searchmount Road.....	23	300
557	Matinenda Road.....	14	200
563	Batchawana Village Road.....	3	80
565	Point Aux Pins Road.....	4	500
TOTALS.....		563	14,680

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Thessalon By-pass.....	3.26	1959	.....	3.26	10,963
17 T.C.	Aux Sable River bridge.....	.6	1957	.....	.6	2,977
17 T.C.	Blind River bridge.....	.2	1958	.....	.2	1,060
TOTALS.....		4.06	.....	.....	4.06	15,000



Grading on Havilland Causeway, Highway 17 (T.C.H.). Contract 58-613, Sault Ste. Marie District.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
555	Jct. of Sec. Hwy. 557 to 2 mi. north ..	2.0	6,000	120

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Thessalon west town limits, westerly...	22.30	4,057.62
17 T.C.	Montreal River south	36.75	3,049.14
TOTALS		59.05	7,106.76

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
548	Hilton Beach to Richards Landing (St. Joseph Island).....	11		11	16,500

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
17 T.C.	Jct. of Sec. Hwy. 563 to 32 mi. north.....	11	34,000	2,000
129	35 to 47 mi. south of Chapleau.....	12	36,000	1,440
TOTALS.....		23	70,000	3,440

Bridges Built

Hwy No.	Location	Year Begun	Opened to Traffic	Type of Structure
129	Sideburned Lake, 13 mi. southwest of Chapleau.....	1958	Sept. 1959	Reinforced concrete

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
17	T.C. Sault Ste. Marie.....	Salt storage	1959	1959
17	T.C. Wawa.....	Salt storage	1959	1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted.....	2	.....	.....
Calcium dust layer on gravel roads.....	.....	525	301
Roads snowploughed and kept open, King's Highways.....	.....	.....	405
Roads snowploughed and kept open, Secondary Highways.....	.....	.....	209
Roadside picnic places maintained.....	29	.....	.....
Routine maintenance, King's Highways.....	.....	.....	405
Routine maintenance, Secondary Highways.....	.....	.....	249
Salt for de-icing roads (raw).....	.....	2,500	168
Salt in sand, stockpiled.....	.....	1,520	.....
Sand for winter maintenance.....	.....	30,400	.....
Scale houses maintained.....	2	.....	.....
Seeding by department's forces.....(sq. yds.)	480,000	.....	.....
Signs erected or replaced.....	3,065	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	20
Zone painting on King's Highways.....	.....	.....	308
Zone painting on Secondary Highways.....	.....	.....	33



Spanish River bridge on Highway 17 (T.C.H.) at Massey. Contract 57-130. Sault Ste. Marie District.



Cavers Hill cut-off on Highway 17 (T.C.H.). Contract 58-103, Fort William District.



Rock excavation on Highway 17 (T.C.H.) west of Rossport. Contract 58-103, Fort William District.

DISTRICT No. 19—FORT WILLIAM**J. B. GARLAND, P.Eng., District Engineer****Construction**

To the west of Fort William, on the Trans-Canada Highway, the major grading contract from 7.5 miles west of Shabaqua to Raith was completed except for final trimming (6.5 miles of this completed grade mulched with the department's motor paver), and good progress made on a new contract westerly from Raith.

On the Trans-Canada Highway east of Fort William, considerable progress was made on grading from Amethyst Station Road to the Loon Lake Road, Loon Lake Road to Pearl River and Pearl River to Ouimet. The grading from Ouimet to Coldwater Creek was virtually completed and Coldwater Creek to 10 miles south of Red Rock was completed. From Nipigon easterly the majority of the earth and granular work on a 10 mile grading contract was finished. Grubbing and grading began on a similar contract 10 to 20 miles east of Nipigon. The heavy rock grading in the vicinity of Cavers Hill was completed, leaving only the trimming on the easterly 3 miles to be finished; the new grade from Pays Platt to east of Rossport was opened to traffic except for one short section and drilling and excavation started on a heavy rock grading from Schreiber westerly to Selim Lake.

With respect to structures east of Fort William the substructure was completed for a new overhead at Ouimet to eliminate the railway level crossing. The new structure at Coldwater Creek, although not completed entirely, was opened to traffic. The structure at the Wolfe River was completed and good progress made on the two bridges at Pays Platt. Early in 1960 they were opened to traffic. An overhead at Rossport was constructed and opened to traffic while the piling and footings for the new structure at Pic River was completed.



C.P.R. overhead at Rossport on Highway 17 (T.C.H.). Contract 58-279, Fort William District.

Hot mix paving was begun on an 11 mile contract from south of Red Rock Corners to Ouimet. The completed grading contract from Nipigon to Red Rock Corners was paved. Some 9 miles of base laid from Terrace Bay westerly on a contract which also included considerable grading and granular base. The paving was finished from Marathon easterly to Rouse Lake. Structure and approaches at the Wolfe, Black Sturgeon, Steel and Prairie Rivers and the North Trout and Stillwater Creek were paved.

On Highways other than the Trans-Canada Highway, grading was begun on a 10 mile contract west of Atikokan, granular base was placed on Secondary Highway 582 (the Hurkett Loop) and a 5 mile section north and south of Macdiarmid was paved.

Clearing by day labour forces was carried out on the Trans-Canada Highway from Little Firesteel River westerly for 10 miles and from 23 to 31 miles east of Nipigon. Shorter sections on Highway 61 near Pigeon River (Minnesota-Ontario border) and Secondary Highway 633 to Kawene were also cleared.

Maintenance

Twenty-five miles of seal coat were done between Jellicoe and Geraldton with excellent results. The method used entailed a first coat using sand and then a second coat using $\frac{3}{8}$ inch chips. The Department of Highways crusher produced 15,615 tons of $\frac{5}{8}$ inch crushed gravel in Fort William district.

Eighteen rustic tables, 10 outhouses and 6 fireplaces were constructed by district forces for picnic areas.

Fourteen miles of Secondary Highway 614 (Manitouwadge Road) were reconstructed on an equipment rental basis. Work included two creosoted timber culverts.

Three bridges were rebuilt by district forces, the Arrow River bridge on Secondary Highway 593, Low River bridge and Central Patricia bridge on Secondary Highway 599.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17	T.C. 1.75 mi. west of Cavers to Pays Platt.....	8.0	1958	3.8	3.6
17	T.C. 7.5 mi. north to Jet. of Hwy. 120 to Raith.....	10.1	1958	4.5	5.6
17	T.C. Coldwater Creek to 10 mi. south of Red Rock.....	5.7	1958	4.6	1.1
17	T.C. Ouimet to Coldwater Creek.....	5.25	1958	1.4	3.85
17	T.C. West end Selim Diversion to Pays Platt.....	7.6	1958	0.6	7.0
17	T.C. Jackfish Lake to Terrace Bay.....	17.64	1958	.....	16.0
17	T.C. Raith to Poland.....	9.35	1959	.....	3.3
17	T.C. Amethyst Road to Loon Lake Road.....	8.65	1958	.....	6.2
17	T.C. Pearl River to Loon Lake Road.....	5.20	1959	.....	3.7
17	T.C. Ouimet to Pearl River.....	6.5	1959	.....	1.5
17	T.C. Nipigon River bridge to 10 mi. easterly....	10.4	1959	.....	7.0
17	T.C. 10 mi. east of Nipigon to 20 mi. east of Nipigon.....	9.73	1959	.....	1.4
82	Hurkett Loop.....	4.0	1959	.....	2.4
TOTALS.....		108.19		14.9	62.65



Paving of Nipigon Look-out on Highway 17 (T.C.H.). Contract 58-164, Fort William District.

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Cavers to Pays Platt.....	8.0	1958	....	5.0	152,100
17 T.C.	7.5 mi. north of Jct. of Hwy. 120 to Raith.....	10.1	1958	1.1	9.0	234,062
17 T.C.	Coldwater Creek to 10 mi. south of Red Rock.....	5.7	1958	3.8	1.9	65,450
17 T.C.	Ouimet to Coldwater.....	5.25	1958	0.3	4.95	172,500
17 T.C.	Amethyst Road to Loon Lake Road.....	8.65	1958	....	7.5	195,901
17 T.C.	Selim Hill to Pays Platt.....	7.6	1958	1.5	6.1	175,950
17 T.C.	Jackfish Lake to Terrace Bay..	17.64	1958	....	16.0	450,544
17 T.C.	Ouimet overhead.....	0.064	1959	....	0.042	4,980
17 T.C.	East end of Nipigon bridge to 10 mi. east.....	10.4	1959	....	6.0	162,000
17 T.C.	Loon Lake Road to Pearl River.	5.2	1959	....	2.6	89,700
17 T.C.	Pearl River to Ouimet.....	6.5	1959	....	2.3	77,579
17 T.C.	Raith to Poland.....	9.35	1959	....	2.1	109,060
17 T.C.	Red Rock Corners to Nipigon bridge.....	7.31	1959	....	7.31	15,253
17 T.C.	Wolf River bridge (backfill).....	.....	1958	....	.....	6,960
11	Macdiarmid north and south....	5.7	1959	....	5.7	7,826
TOTALS.....		107.46		6.7	76.50	1,919,865



Cavers Hill cut-off on Highway 17 (T.C.H.). Contract 58-103, Fort William District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17 T.C.	7.5 mi. north of Jct. of Hwy. 120 to Raith.....	10.1	88,805
17 T.C.	Raith to Poland.....	3.0	18,680
17 T.C.	Cavers Hill to Pays Platt.....	3.5	22,124
17 T.C.	West end Selim Diversion and C.P.R. overhead at Rossport to Pays Platt River.....	2.5	4,035
17 T.C.	Coldwater Creek to Ouimet.....	5.0	40,296
17 T.C.	Amethyst Station Road to Loon Lake Road.....	6.0	34,935
17 T.C.	Jackfish Lake to Terrace Bay.....	9.0	122,234
17 T.C.	East end Nipigon bridge to 10 mi. east.....	.....	179
17 T.C.	Loon Lake Road to Pearl River.....	5.2	5,046
17 T.C.	Pearl to Ouimet.....	6.5	2,438
17 T.C.	10 mi. south of Red Rock to Ouimet.....	0.25	543
	Sec. Hwy. 582.....	4.0	17,487
17 T.C.	Red Rock Turn to Nipigon River (including Black Sturgeon approaches).....	7.31	12,841
11	Macdiarmid north and south.....	5.7	5,735
TOTALS.....		68.06	375,378

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
590	Jct. Hwy. 588 to 7.0 mi. north.....	7.0	7,100
588	Jct. Hwy. 17 to 7.0 mi. west.....	7.0	6,194
585	Jct. Hwy. 17 to Cameron Falls.....	12.0	5,900
584	Vicinity of Murky Creek.....	12.0	9,600
580	Jct. Hwy. 17 to Leitch.....	4.0	750
587	Various locations.....	.....	7,500
614	Jct. Hwy. 17 to Black River.....	13.2	7,850
TOTALS.....		55.2	44,894

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	10 mi. south of Red Rock Corners to Ouimet.....	10.83	1959	.....	.....	8,484
17 T.C.	Red Rock Corners to Nipigon River bridge.....	7.20	1958	.....	7.2	20,390
17 T.C.	Black Sturgeon River bridge and approaches.....	0.6	1958	.....	0.6	1,438
11	Macdiarmid north and south....	5.0	1958	.....	5.0	13,242
17 T.C.	Jackfish Lake to Terrace Bay..	17.64	1959	.....	(Base only)	11,388
17 T.C.	Steel River bridge and ap- proaches.....	0.266	1959	.....	0.266	1,053
17 T.C.	Prairie River bridge and ap- proaches.....	0.163	1959	.....	0.163	701
17 T.C.	Marathon Road easterly to Rouse Lake.....	22.5	1958	20.25	2.25	4,176
TOTALS.....		64.199		20.25	15.48	60,872

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
17 T.C.	White Sand Lake to 4.0 mi. west.....	4.0	8,179	534
17 T.C.	Gravel River to 12.0 mi. west.....	12.0	22,804	1,295
17 T.C.	Dorion to 2.5 mi. west.....	2.5	4,000	273
17A	Jct. Hwy. 17 to 16 mi. east.....	16.0	41,845	1,678
130	Jct. Hwy. 590 to 3.0 mi. east.....	3.0	11,293	534
582	Hwy. 17 to Hurkett Loop.....	4.0	12,244	504
585	Hwy. 17 to Pine Portage.....	24.0	73,048	1,963
590	Jct. Hwy. 130 to Jct. Hwy. 588 (5 mi. double).....	30.0	61,626	3,041
595	Jct. Hwy. 590 to Jct. Hwy. 608.....	12.0	23,211	1,243
588	Jct. Hwy. 17 to Jct. Hwy. 595.....	10.0	24,783	1,050
591	Trout Lake Road.....	5.0	4,516	415
589	Dog Lake Road.....	19.0	27,715	2,040
TOTALS.....		141.5	315,264	14,570

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	7.5 mi. west of Jct. of Hwy. 120 to Raith..	10.1	.....	6.5	9,224

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
130	Hwy. 61 to Jct. Hwys. 130 and 590.....	11.0	23,505	1,145
11	Geraldton Corner westerly.....	25.0	129,678	5,040
TOTALS.....		36.0	153,183	6,185

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Wolf River, 4 mi. east of Dorion.....	1958	1959	Reinforced concrete
17 T.C.	Rosspport overpass, east of Rosspport station — Twp. 86.....	1959	1959	Structural steel and reinforced concrete
627	Ontario Paper Co. Flume, Heron Bay....	1959	1959	Creosoted crib
599	Low River, 50 mi. north of Savant Lake..	1959	1959	Creosoted crib
599	Central Patricia, 114 mi. north of Savant Lake.....	1959	1959	Creosoted crib
593	Arrow River, mileage 12.0 Devon Road....	1959	1959	Untreated timber

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
11	Geraldton.....	4-bay patrol garage	1958	June 1959
61	Moose Hill, Blake Twp.....	Standard salt shed	1959	December 1959
17 T.C.	Jackpine River.....	Kitchen and dining room	1959	May 1959
17 T.C.	Jackpine River.....	Washroom	1959	May 1959
17 T.C.	Jackpine River.....	Office	1959	June 1959
17 T.C.	Jackpine River.....	Bunkhouse	1959	June 1959
17 T.C.	Jackpine River.....	Bunkhouse	1959	June 1959
17 T.C.	Jackpine River.....	Storeroom	1959	July 1959
17 T.C.	Jackpine River.....	Light plant shelter	1959	July 1959
17 T.C.	Big Squaw Creek Pit.....	Asphalt testing lab	1959	September 1959
Twp. Neebing	Twp. (Mapleward Road, 1/4-mi. north of Hwy. 17).....	Bailey bridge, work shop	1959	October 1959
17 T.C.	White River.....	Maintenance garage	1959	December 1959

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	5		
Calcium dust layer on gravel roads.....		728	381
Calcium for de-icing roads		1	Spots
Off-road parks maintained	20		
Roads snowploughed and kept open, King's Highways.....	6		675
Roads snowploughed and kept open, Secondary Highways....	19		419
Roadside picnic places maintained.....	3		
Routine maintenance, King's Highways.....			636
Routine maintenance, Secondary Highways.....			419
Salt for de-icing roads (raw)		4,516	522
Salt in sand, stockpiled.....		865	
Sand for winter maintenance...		22,460	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	1,393,920		
Signs erected or replaced.....	4,500		
Snow fence erected, dismantled, stored...			25
Weed control			853
Zone painting on King's Highways.....			543
Zone painting on Secondary Highways.....			29



Bridge construction on Highway 17 (T.C.H.) at Big Pic River. Contract 58-256, Fort William District.



Grading at Granite Lake on Highway 17 (T.C.H.). Contract 58-19, Kenora District.

DISTRICT No. 20—KENORA**F. B. WHITELEY, P.Eng., District Engineer****Construction**

The Winnipeg River bridge at Kenora on Highway 17 although not entirely completed was opened to traffic. Road work continued on Trans-Canada Highway 17 under 6 grading contracts and 3 paving contracts. Asphalt gutter was added to one paving contract. The contractor built a gutter compacting unit which works parallel to the highway. The results appear excellent.

Two bridge contracts on the Rainy River causeway were awarded. One, a contract for pre-casting concrete beams and pier caps, was completed. The other contract is for erecting approximately 2,500 feet of bridging and placing 1,500 feet of rock causeway. The causeway portion was completed during the winter. The shooting of the rock fill and granular back-fill at abutments has proved very successful in displacing the underlying clay so that the fill will rest on bedrock. Work progressed favourably on the Canadian approach to the Rainy River-Baudette International Bridge.

Maintenance

Priming and surface treatment of Highway 105 was carried out by department forces over 87 miles with excellent results. This has reduced maintenance costs and released graders for work on gravel roads elsewhere with a considerable saving in granular material required for stockpiling purposes. Granular base and crushed gravel was placed on the remainder of Highway 105 in preparation for completing the prime and surface treatment during the next year. This treatment has stood up well under winter conditions and shows very little alligating or potholing due to the spring breakup.



Bridge construction on Highway 17 (T.C.H.) over Winnipeg River. Contract 58-294, Kenora District.

A large number of signs were manufactured and erected by the paint shop including 78 Resort Area signs. During the winter months brushing and clearing was completed over 53 miles of highways.

In the southern portion of the district snow fence erection was reduced by 14 miles. This reduction did not increase winter maintenance costs over previous years as no extra snow had to be ploughed due to the absence of snow fencing.

Three bridges were completely redecked without interfering with the free flow of traffic.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17 T.C.	6.1 mi. east of Manitoba boundary to 12.2 mi. east of Manitoba boundary.....	6.1	1958	5.00	1.10
17 T.C.	12.2 mi. east of Manitoba boundary to 18.4 mi. east of Manitoba boundary.....	6.2	1958	.....	5.00
17 T.C.	Approaches to Winnipeg River bridge at Kenora.....	0.5	1959	.....	0.50
17 T.C.	5 mi. west of Hwy. 105 to 16.1 mi. west of Hwy. 105.....	11.1	1959	.....	7.00
17 T.C.	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	9.93	1958	3.00	6.93
17 T.C.	Ignace to 1.5 mi. east of Borup's Corners....	7.42	1959	.....	1.00
71	Canadian approach to Rainy River-Baudette International bridge.....	2.23	1959	.....	1.23
105	Approaches to Little Wabigoon River bridge (approx. 6 mi. north of Hwy. 17)..	0.25	1959	.....	0.25
120	Rainy Lake Causeway, east approaches....	0.93	1958	0.40	0.53
120	Rainy Lake Causeway, west approaches....	0.68	1958	.....	0.68
TOTALS.....		45.34		8.40	24.22



Hot Mix paving on Highway 17 (T.C.H.) at Vermilion Bay. Contract 59-19, Kenora District.



Heavy grading on Highway 17 (T.C.H.) west of Vermilion Bay. Contract 58-222. Kenora District.

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	6.1 mi. east of Manitoba boundary to 12.2 mi. east of Manitoba boundary.....	6.10	1958	1.5	4.60	39,240
17 T.C.	12.2 mi. east of Manitoba boundary to 18.4 mi. east of Manitoba boundary.....	6.20	1959	....	4.20	61,880
17 T.C.	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	9.93	1958	2.0	7.93	72,900
17 T.C.	Ignace to 1.5 mi. east of Butler.	7.42	1959	....	0.50	332
71	Canadian approach to Rainy River-Baudette International bridge.....	2.23	1959	....	2.23	76,240
105	Wabigoon River bridge approaches (approx. 6 mi. north of Hwy. 17).....	0.24	.....	....	0.24	3,580
	TOTALS.....	32.12		3.5	19.70	254,172

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	Longbow Corners to Vermilion Bay.....	62	1959	.....	62	7,644
17 T.C.	Ontario-Manitoba boundary to Longbow Corners.....	45	1959	.....	45	5,371
70 (71)	Longbow Corners to Finland....	85	1959	.....	85	7,682
72	Patricia Corners to Dinorwic....	38	1959	.....	38	30,611
105	Vermilion Bay to Jct. Hwy. 125.	100	1959	.....	100	40,321
116	Patricia Corners to Hudson.....	10	1959	.....	10	7,373
119	Dryden to Richan.....	13	1959	.....	13	4,800
125	Jct. Hwy. 105 to Cochenour Dock.....	8	1959	.....	8	1,628
128	Kenora to Redditt.....	18	1959	.....	18	3,024
592	Fort Frances to Rainy Lake....	2.5	1959	.....	2.5	288
594	Dryden to Eagle River.....	22.0	1959	.....	22.0	845
596	Hwy. 17 to Pellatt LacLu Loop.	18.0	1959	.....	18.0	2,232
595	Jct. Hwy. 128 Redditt Rd. to Jct. Hwy. 600 E. Mellick Rd.	2.8	1959	.....	2.8	330
600	Harris Hill to Black Hawk.....	44	1959	.....	44	732
601	Dryden to Rice Lake Loop.....	16	1959	.....	16	1,201
602	Emo to Fort Frances.....	30	1959	.....	30	1,051
603	Hwy. 17 to Dymont.....	3	1959	.....	3	218
604	Jct. Hwy. 128 to town of Kenora.....	15	1959	.....	15	3,308
611	Crozier Road north and south.	13	1959	.....	13	2,001
613	Devlin Road.....	25	1959	.....	25	2,440
615	Black Hawk to Clearwater Lake.....	15	1959	.....	15	12,200
619	Pinewood to Minahico.....	25	1959	.....	25	3,645
621	Sleeman to Lake of the Woods.	33	1959	.....	33	98,187
623	Rainy River to Harris Hill.....	16	1959	.....	16	1,050
TOTALS.....		659.3			659.3	238,182

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17 T.C.	6.1 mi. east of Manitoba boundary to 12.2 mi. east of Manitoba boundary.....	6.1	5,640
17 T.C.	12.2 mi. east of Manitoba boundary to 18.4 mi. east of Manitoba boundary.....	6.2	192
17 T.C.	6.1 mi. east of Manitoba boundary to 18.4 mi. east of Manitoba boundary.....	8.3	10,370
17 T.C.	5 mi. west of Hwy. 105 to 16.1 mi. west of Hwy. 105.....	11.1	1,750
17 T.C.	5 mi. east of Hwy. 105 to 5 mi. west of Hwy. 105.....	5.0	4,186
17 T.C.	5 mi. east of Hwy. 105 to 5 mi. west of Hwy. 105.....	10.0	21,366
17 T.C.	Eagle River bridge approaches.....	0.25	104
17 T.C.	13 mi. east of Borup's Corners easterly 6.5 mi.....	0.5	126
17 T.C.	2 mi. east of Borup's Corners to 2.5 mi. west of Raleigh.....	15.15	47,149
17 T.C.	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	8.0	4,500
71	Barwick to Manders and Pinewood to Rainy River.....	15.1	15,851
105	Wabigoon River bridge approaches (approx. 6 mi. north of Hwy. 17).....	0.24	590
105	Chukuni River bridge approaches (approx. 89 mi. north of Hwy. 17).....	0.28	238
TOTALS.....		127.22	172,040



Bridge construction at Rainy River before bridge crossing was made by ferry. Kenora District.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17	14 mi. west of Kenora to Borup's Corners.....	135	5,196
70	Longbow Corners to 2 mi. north of Finland.....	82	1,820
71	Stratton to Sleeman.....	14	185
72	Dinorwic to Patricia Corners.....	38	14,864
105	Vermilion Bay to Jct. Hwy. 125.....	100	21,345
116	Patricia Corners to Hudson.....	10	50
119	Jct. Hwy. 17 to Richan.....	13	2,182
125	Chukuni River bridge to Cochenour.....	6	2,985
128	Kenora to Redditt.....	18	1,863
594	Dryden to Eagle River.....	22	525
596	Hwy. 17 to Pellatt LacLu Loop.....	18	120
598	Rabbitt Lake Road.....	2.8	300
600	Harris Hill to Black Hawk.....	44	3,210
601	Dryden to Rice Lake Loop.....	16	510
602	Emo to Fort Frances.....	30	2,593
613	Devlin Road.....	25	5,515
615	Black Hawk to Clearwater Lake.....	15	1,087
617	Stratton to North Branch Road.....	14	1,471
618	Red Lake to Madsen Mine.....	7	1,120
619	Pinewood to Minohico Road.....	25	1,671
621	Sleeman to Lake of the Woods.....	33	1,869
623	Rainy River to Harris Hill.....	16	500
TOTALS.....		683.8	70,981

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17 T.C.	6.1 mi. east of Manitoba bound- ary easterly 12.54 mi.....	12.54	1959	....	12.54	12,300
17 T.C.	5 mi. east of Hwy. 105 to 5 mi. west of Hwy. 105.....	10.00	1959	....	10.00	25,094
17 T.C.	Eagle River bridge approaches.....	0.25	1959	....	0.25	618
17 T.C.	2 mi. east of Borup's Corners to 2.5 mi. west of Raleigh.....	15.15	1959	....	15.15	37,095
71	Barwick to Manders and Pine- wood to Rainy River.....	15.10	1958	5.0	10.10	12,449
TOTALS.....		53.04		5.0	48.04	87,556

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
105	Perrault Falls to 10 mi. south.....	9.0	38,000	990
105	Bug River to Jct. Hwy. 125.....	7.2	25,000	975
125	Jct. Hwy. 105 to Cochenour Dock.....	6.4	23,600	675
105	Jct. Hwy. 17 to 10 mi. north.....	10.0	39,460	1,015
17	40 mi. west of Kenora to 1 mi. east.....	1.0	3,600	123
TOTALS.....		33.6	129,660	3,778

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Chips Used 1959-60
17	East Hawk Lake Rd. easterly 8 mi.....	8.0	25,059	1,717
105	Jct. Hwy. 17 northerly 4 mi.....	4.0	10,750	468
105	Perrault Falls northerly 67 mi.....	67.0	183,600	7,593
125	Cochenour Dock westerly 7.6 mi.....	7.6	19,800	918
TOTALS.....		86.6	239,209	10,696

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	East branch of Winnipeg River at Kenora....	1958	Jan. 1960	Steel and concrete
105	Approx. 6 mi. north of Hwy. 17.....	1958	Sept. 1959	Steel and concrete

Totals of Other Work Done

Item	Total Number	Total Tons	Total Items
Calcium dust layer on gravel roads.....	.....	1,698	436
Calcium for de-icing roads.....	.....	75	68
Off-road parks maintained.....	4	.....	.....
Roads snowploughed and kept open, King's Highways.....	9	.....	592.7
Roads snowploughed and kept open, Secondary Highways.....	19	.....	323.1
Roadside picnic places maintained.....	20	.....	.....
Routine maintenance, King's Highways.....	.....	.....	592.7
Routine maintenance, Secondary Highways.....	.....	.....	323.1
Salt for de-icing roads (raw).....	.....	1,020	292
Salt in sand, stockpiled.....	.....	1,795	.....
Sand for winter maintenance.....	.....	37,618	.....
Scale houses maintained.....	4	.....	.....
Seeding by department's forces..... (sq. yds.)	580,800	.....	.....
Signs erected or replaced.....	6,426	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	60.83
Zone painting on King's Highways.....	.....	.....	328.8
Zone painting on Secondary Highways.....	.....	.....	2.8



Grading on Highway 621 near Morson. Day labour, Kenora District.



Section of Highway 17 (T.C.H.) north of Agawa River in "The Gap". Contract 56-114, White River District.

SP 56-1—WHITE RIVER, (Trans-Canada Highway)**E. R. KENNY, P.Eng., Project Engineer****Construction**

This year saw the breakthrough in the Algoma 'Gap' area between Marathon and the Agawa River.

By November 1959, all grading had been completed except for 10 miles north of Wawa and approximately 10 miles to the south. These contracts were in a semi-completed state, and with the aid of a few bush detours, it was possible for traffic to move through the 'Gap' during the winter months. By the time the breakup began in 1960, all contracts had been fairly well roughed out and most of the detours eliminated.

Twenty-eight miles of grading was completed this year and paving was completed on 38 miles and begun on an additional 37.5 miles. Of this, 22 miles of base pavement was laid. Twelve bridges were completed this fiscal year, and work was underway on five others. Despite a late spring, the weather was favourable and the contractors made good progress throughout the season.

Maintenance

Patrol crews were set up at Wawa and White River. These will be reported by Sault Ste. Marie and Fort William districts.



Rock cut near Coldwater River in "The Gap", 14 miles north of Agawa River on Highway 17 (T.C.H.).
Contract 58-68, White River District.



Bridge over the Coldwater River in "The Gap" on Highway 17 (T.C.H.). Contract 58-629, White River District.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60
17	18.4 mi. east of White River to 29 mi. north of Wawa.....	10.0	1957	7.0	3.0
17	29 mi. north of Wawa to 19.1 mi. north of Wawa.....	10.0	1958	7.0	3.0
17	19.1 mi. north of Wawa to 10 mi. north of Wawa.....	9.1	1958	3.0	6.1
17	Michipicoten River south for 6 mi.....	6.0	1957	5.5	0.5
17	6 mi. south of Michipicoten River to 2 mi. south of Old Woman River.....	7.0	1958	.....	5.5
17	2 mi. south of Old Woman River south for 10.3 mi.....	10.3	1958	.....	9.0
17	25 mi. north of Agawa River to 15 mi. north of Agawa River.....	10.0	1958	9.0	1.0
TOTALS.....		62.40		31.5	28.1

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	21.8 mi. east of Marathon to 33.8 mi. east of Marathon.....	12.0	1957	3.0	9.0	36,390
17	18.4 mi. east of White River to 28.4 mi. east of White River..	10.0	1957	3.0	7.0	58,968
17	Michipicoten River to 6 mi. south of Michipicoten River.	6.0	1957	.....	6.0	56,491
17	6 mi. south of Michipicoten River to 2 mi. south of Old Woman Bay.....	7.0	1959	.....	4.5	18,205
17	2 mi. south of Old Woman Bay to 25 mi. north of Agawa River.....	10.3	1959	.....	0.5	3,691
17	25 mi. north of Agawa River to 15 mi. north of Agawa River.	10.0	1958	4.5	5.5	53,905
TOTALS.....		55.3		10.5	32.5	227,650



Highway 17 (T.C.H.) at Bed Pan Lake north of Wawa. Grading and culverts. Contract 58-81. White River District.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1959-60	Tons Placed 1959-60
17	Rouse Lake 16 mi. east of Marathon to 34.92 mi. east of Marathon.	18.92	58,107
17	10.6 mi. west of White River to 8.4 mi. east of White River.....	19.0	36,835
17	8.4 mi. east of White River to 28.4 mi. east of White River.....	20.0	58,968
17	28.4 mi. east of White River to 10 mi. north of Wawa.....	19.1	
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	19.0	15,150
17	6 mi. south of Michipicoten River to 2 mi. south of Old Woman Bay.....	7.0	8,990
17	2 mi. south of Old Woman Bay southerly 10.3 mi.....	10.3	3,691
17	25 mi. north of Agawa River to 15 mi. north of Agawa River.....	10.0	53,905
17	3 mi. south of Agawa River to 15 mi. north.....	18.84	19,320
TOTALS.....		142.16	254,966

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1959-60	Gals. Bit. Used 1959-60	Tons Sand Used 1959-60
17	Rouse Lake to White Lake Narrows (mi. 16 to mi. 34.92 east of Marathon).....	18.92	72,557	342
17	10 mi. north of Wawa to 4 mi. south of Michipicoten River.....	14.0	49,009	690
17	Mi. 15 to mi. 6 north of Agawa River.....	9.0	32,192	339
TOTALS.....		41.92	153,758	1,371

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1959-60	Tons Placed 1959-60
17	Rouse Lake to White Lake Narrows (mi. 16 to mi. 34.92 east of Marathon).....	18.92	1959	.....	18.92	46,072
17	11.7 mi. west of White River to 7.5 mi. east (C.P.R. overhead).....	19.2	1958	3.0	16.2	16,370
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	18.84	1959	.....	(Base only)	33,590
17	3 mi. south to 15 mi. north of Agawa Bridge.....	18.84	1959	.....	(Base only)	20,102
TOTALS.....		75.80		3.0	35.12	116,134

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17	Wabikoba Creek.....	1958	August 1959	Concrete on steel beams
17	Bertrand Creek.....	1958	June 1959	Concrete on steel beams
17	White River west crossing.....	1958	August 1959	Concrete on steel beams
17	Catfish Creek.....	1959	November 1959	Rigid frame
17	Catfish Creek.....	1959	November 1959	Concrete on steel beams
17	A.C.R. overhead.....	1958	May 1959	Concrete on pre-cast concrete beams
17	Magpie River.....	1958	June 1959	Concrete on steel beams
17	Michipicoten River.....	1958	May 1959	Concrete on steel beams
17	Baldhead River.....	1959	October 1959	Concrete on steel beams
17	Baldhead River.....	1959	October 1959	Concrete on steel beams
17	Coldwater River.....	1959	November 1959	Concrete on steel beams
17	Barrett River.....	1959	August 1959	Rigid frame

New Buildings

Hwy. No.	Location	Type	Year Begun	Completed
17	White River garage (under Fort William District Report).....	Maintenance garage	1959	December 1959
17	Wawa salt shed (Built by District 18 in 1959).			



Looking toward Coldwater River in "The Gap". Hot Mix paving on Highway 17 (T.C.H.). Contract 59-68, White River District.



White Lake Narrows bridge on Highway 17 (T.C.H.). Contract 57-114, White River District.



Culverts for crossing of Kabenung Lake on Highway 17 (T.C.H.) in "The Gap". Contract 58-81, White River District.

PLANNING AND DESIGN BRANCH

JOHN WALTER, P.Eng., *Director of Planning and Design*

PLANNING DIVISION

J. B. Wilkes, P.Eng.
Planning Engineer

ROAD DESIGN DIVISION

D. G. Ramsay, P.Eng.
Road Design Engineer

BRIDGE DIVISION

A. M. Toye, P.Eng.
Bridge Engineer

LOCATION SECTION

H. A. MANTLE, P.Eng., *Location Engineer*

Location Project Subsection

During the 1959-60 period, the Location Project Subsection was formed to handle preliminary planning work for the Planning and Design Branch. This Group is responsible for the preparation of functional design plans and for liaison with the local municipalities. In the past year, 37 projects were prepared, of which 22 were major controlled-access highways.

Some of the major projects include: Homer Skyway (Q.E.W.); Gravenhurst By-pass; Toronto By-pass (C.A.H. 401); Lancaster to Quebec Boundary (C.A.H. 401); Toronto to Freeman (C.A.H. 403); Chedoke Expressway (C.A.H. 403); St. Thomas By-pass; Highway 27 to Bayview on new Highway 7; Don Valley Parkway Extension; approach to the new Lewiston Bridge; New Highway 58, Welland to St. Catharines; Wasaga Beach By-pass.

Location Plans Subsection and Field Subsection

Resources Road surveys were continued during this year; the notable ones being: Nakina to Cavell — 14 miles; Savant Lake to Valora — 13 miles; Minaki South — 18 miles. Access road surveys totalled 9.2 miles. A total of 1,263 miles of surveys of all types was completed by the field section. This figure is reduced from the previous year because of the transfer of four parties to the London Region.

During this last fiscal year, with the formation of the London Region, eleven draughtsmen and clerks and four field parties were transferred from Head Office to London. However, the Location Plans Subsection held the draughting mileage to approximately the same figure (1,263 miles this year as compared with 1,302 miles for last year) and increased their output of special plans. One hundred and seventeen Railway Board Plans were completed and an additional 81 Special Plans were prepared for the Location Project Subsection. The design work of this Subsection also maintained the same rate as the previous year with 1,486 miles of grade and alignment completed and 141 structures issued to the Bridge Office for design purposes.

Eighty-five standard plans were completed and issued representing 75 per cent of the total highway mileage. Secondary Highway coverage will continue when the new standard plans are available for all highways in the summer of 1960.

With the opening of the new offices at Downsview, the "Referencing Group," formerly attached to the Plan Files Section, was transferred to the Location Plans Subsection. This Group is responsible for the cross-referencing of all new plans (948 during this year) and the addition of land plans, subdivisions, etc., to existing detail plans (6,213 additions made this year).

The Field and Office draughting are summarized as follows: Detail Surveys — 1,263 miles; Bridge Site Plans — 183; Railway Board Plans — 117; Miscellaneous Plans — 81.

TRANS-CANADA HIGHWAY

	Field Work and Draughting Complete	Design Work Complete	Bridge Sites	Railway Board Plans
Kingston.....	31.9	31.9	....	1
Huntsville.....	3.6	3.6	1	1
Sudbury.....	.....	6.8	.....	.....
Sault Ste. Marie.....	41.6	72.3	1	.....
Fort William.....	28.1	34.9	1	1
Kenora.....	15.6	9.1	2	.....
TOTALS.....	120.8 mi.	158.6 mi.	5	3

Summary of Functional Design Work Completed

District	Grade and Alignment (Miles)	Bridge Site Plans (Supplied to Bridge Office for Design)
1. Chatham.....	85.3	34
2. London.....	98.4	18
3. Stratford.....	44.7	7
4. Hamilton.....	120.8	3
5. Owen Sound.....	55.5	5
6. Toronto.....	96.3	10
7. Port Hope.....	89.2	5
8. Kingston.....	75.7	26
9. Ottawa.....	123.0	17
10. Bancroft.....	87.8	3
11. Huntsville.....	63.0	6
13. North Bay.....	113.0	1
14. New Liskeard.....	75.1	.....
16. Cochrane.....	47.2	5
17. Sudbury.....	52.9	3
18. Sault Ste. Marie.....	123.9	2
19. Fort William.....	88.5	4
20. Kenora.....	45.8	2
TOTALS.....	1,486.1	141

Photogrammetry Subsection

During the fiscal year this section projected on aerial photographs some 391 miles of new centre line location, added 875 miles of revised location to existing study plans and transferred some 450 miles of projections from old to new 1958 inventory photographs.

Sixteen study plans were produced at the scale of 400 feet equals 1 inch covering 361,146 acres. Twenty-four plans of the same scale were revised covering 111,215 acres. In addition, 16 study plans were produced at the scale of 1 inch equals 1,320 feet covering 4,062 square miles and 11 plans covering 2,014 square miles and 2 plans at the scale of 100 feet equals 1 inch were revised from aerial photography.

Catchment areas were prepared from aerial photographs in the Cochrane area covering 23,325 acres; in the New Liskeard area covering 3,601 acres and a drainage pattern of the area just east of the Rainy Lake Causeway covering 63 square miles.

A total of 14,800 prints were ordered, 7,212 for the London Regional office and the remainder of 7,588 added to our library of 94,000 aerial photographs.

Intersection Design Subsection

Summary

	Work Projects	Non-work Projects
Channelizations Completed.....	37	22
Interchanges Completed.....	51	9
Service Road Designs.....	10	
Pavement Widening Designs.....	10	
Truck Climbing Lane Designs.....	5	
Property Sales Processed.....		57
Property Requisition.....		25
Applications (Motels, Service Stations, etc.).....		131
Patrol Yards.....		46

Road Closing Plans were also prepared by the Location Project Subsection.

STATISTICS AND ECONOMICS SECTION

P. E. WADE, P.Eng., Highway Analysis Engineer

The year ending March 31, 1960, was the Section's sixth year of operation. Besides fulfilling its routine responsibilities, the Section completed several special studies and expanded its contacts in the field with municipal and other organizations through liaison activities on many local road and highway planning programs.

The Section is divided into three groups whose work during the past year is summarized below:

Inventory Group

This Group was engaged in a complete redesign of the inventory sheets both in content and form. To make the information compiled more readily and effectively available, preparations were also made to use the I.B.M. facilities to the fullest extent.

The Group received 156 requests for diverse information during the year from various Sections of the Department and other Government agencies. Among the most important were requests for roadway mileages to be used for: (1) Insurance purposes; (2) D.H.O. circulation, by type of surface; (3) The annual report; and (4) The Dominion Bureau of Statistics.

Centralization of the Departmental offices at Downsview facilitated the gathering and dissemination of data; the increase in work load that resulted made it necessary to enlarge the staff of the Group.

Transportation Studies Group

During the past year, the reports prepared by this Group were, as in previous years, of a broad and varied nature. Among the larger and more comprehensive of these was the report entitled "Proposed Revisions in the Ontario Provincial Highway Systems (King's Highways, Secondary Highways and Tertiary Roads)."

In addition to this report, the Transportation Group completed certain necessary revisions of the Highway Plan for the Hamilton-Wentworth area in preparation for its publication. Also, during the year, the layout and copy for the D.H.O. pamphlet "Roads for the Farming Community" were prepared; and considerable work was done in research and the assembly of basic data for the Niagara Peninsula

Highway Study, which is now in progress. Finally, with increasing frequency, members of the Group have been invited to speak on highway subjects at meetings of various organizations throughout the Province and in the United States.

Urban Studies Group

This year saw a sudden and marked increase in the number of traffic studies being carried out in urban areas and the Urban Studies Group was given the task of liaison between the municipalities and the Department. The Group advised the local municipal staff as to how the study should be organized; and helped draw up Terms of Reference for the traffic consultants. In addition, members of the Group sat on the committee entrusted with the general supervision of the study and participated in numerous meetings with the consultant as the study progressed.

Studies in the Lakehead, London and Sarnia were completed by consultants during this year and a start was made on others in Hamilton, Kitchener-Waterloo, Guelph and Barrie.

Work continued on the Kitchener-Guelph area study and another such study was commenced on the highway system in the Metropolitan Toronto area.

Several small studies were conducted on the justification of certain by-passes and reviews were made of official plans with respect to the road systems shown.

TRAFFIC SECTION

W. Q. MACNEE, P.Eng., Traffic Engineer

The work of the Traffic Section was carried out by four groups, namely: Traffic Control, Characteristics, Route Analysis and Traffic Safety.

Traffic Control

During the fiscal year 1959, the Traffic Control Subsection completed 151 studies of all types including all those scheduled for the rush program of speed zoning studies aimed at increasing the speed limit on Provincial Highways where these studies showed such an increase to be feasible. These latter studies covered approximately 3,500 miles of the major King's Highways.

Late in the year, a comprehensive accident and speed limit investigation study was initiated in conjunction with the Town of Burlington and the Department of Transport. The purpose of this study will be to determine what effect these speed limits and varying degrees of enforcement have on accidents. In this study we are working closely with the Burlington Police Department.

Traffic Signals were recommended as a result of studies at 26 intersections on King's Highways within the Province. Besides computing the proper timing for these new installations we also retimed the then existing 97 traffic signal installations on the basis of traffic requirements. Recommendations were also made to the Operations Branch for the alteration of existing signal controllers, which would operate much more efficiently under traffic actuated control. Several major signal problems were undertaken during the year, not the least of which was the complicated signal timing at the Keele Street-Highway 401 Interchange.

The Signing Group prepared a total of 217 sign layouts, 77 of which were for new interchanges or channelized intersections, 45 were for existing intersections

and 95 were special projects. In addition, approximately 100 existing sign layouts were altered to conform to changes in the Signing Policy.

A new committee comprised of senior representatives from Planning, Operations, Sign and Building Permits and the Departments of Transport and of Travel and Publicity, was formed, primarily to deal with the approval of sign standards and sign policy, although this committee was later extended to include all phases of traffic control. The committee had had seven meetings up until the end of the fiscal year.

Characteristics Group

During the fiscal year a total of 580 requests for traffic information were processed by the Characteristics Group. This total was divided into the following categories: 59 requests from outside the Department; 148 requests from inside the Department and 375 requests from within the Traffic Section.

By the end of the year, one permanent counter location had been relocated and five new locations had been put into operation. Of the total of nineteen permanent counter locations now operating, six now provide directional counts of which 5 record individual lane counts. Continuous traffic volume data are now obtained from the Burlington Bay Skyway, Glenora Ferries, St. Joseph's Islander and most of the Ontario-U.S.A. border points. The latter data are obtained from the Dominion Bureau of Statistics and is generally continuous from 1946. The analysis of these records is a continuing function and provides the necessary data for the adjustment of all short counts to annual average daily traffic volume.

The program of vehicle classification counting by Highway Maintenance Patrols was continued. Two surveys were taken, one on the third Thursday of January and the other on the third Thursday of July. In each survey over six hundred locations were classified. The organization of the inventory count system was completed by the end of the year and at least one count was taken on each significant section of highway.

The analysis of highway sections continued all year, culminating in the production of the 1955 to 1959 Annual Average Daily Traffic Volume Book. The book was enlarged this year with the addition of the Secondary Highways and a Highway summary.

Processing arrangements have been made with the Electronic Computing Section to set up the hourly volume records from the permanent counters on I.B.M. cards. The preliminary work is in progress for 31 counter years and, when completed, the program will provide a method of adjusting short sample counts to annual average daily traffic volumes.

Route Analysis

One hundred and fifty-three requests of which 11 were from outside the Department and 142 from inside the Department were processed during the fiscal year 1959-1960 in the Route Analysis Group.

These requests necessitated the planning, processing and analysing of 24 origin-destination surveys which involved 197,300 coded interviews. Nine of these surveys were full external cordon surveys, involving 76 stations and 138,690 interviews, in the vicinity of the following centres: Fort Erie, Galt and Preston, Kemptville, London, Niagara Falls, Trenton, Sault Ste. Marie, Stratford and Wasaga Beach.

Fourteen were partial cordons involving 29 stations and 49,610 interviews in the vicinity of the following centres: Bancroft, Burlington Beach, Gravenhurst, Hermon, New Glasgow, Ottawa, Port Dover, Ridgetown, Schomberg, Strathburn, West Lorne and in the area of the proposed Highway 403 and new Highway 53.

One survey was of a special nature, to the extent that it was one of the biggest one-day surveys ever carried out in Canada. It was conducted along the line of Highway 401 from Highway 27 to Highway 2 and involved over 550 men, 66 interview stations and 45 card stations, 9,000 interviews and 81,000 card distributions. Altogether, 250,000 cards were processed for this survey.

Because of the increasing number of interviews being handled by the Group, new techniques were and still are being developed to utilize machine processing more fully and to extend the use of the electronic computer in the analysis of the figures.

The large amount of data for the survey of Highway 401 necessitated the development of a program for the electronic computer to balance the AADT's and the interzonal movements. Hand assignments, using time and distance ratio methods, were used with a view to developing a machine program for greater flexibility and speed in the future.

Analysis was also carried out for various requests, utilizing existing survey data, of which the major assignment analysis was for the proposed Chedoke Expressway in the vicinity of Hamilton.

Traffic Safety

The Traffic Safety Subsection is responsible for maintaining accident location files, fatality records, accident rates, etc., for the King's Highway and Secondary Highways. The filing and recording of accident reports by highway location enables us to determine sections of highways, specific intersections or locations where accidents are occurring with frequency.

Motor vehicle traffic accidents occurring on county and township roads are also recorded as well as accidents occurring on streets in municipalities where connecting link agreements have been made with the Department.

During the fiscal year approximately thirty thousand accident reports were received and processed. The Group compiled statistics in answer to 601 requests for accident experience records, accident and fatality rates, etc. This information was used extensively in studies conducted by personnel within the Traffic Section, and the Statistics and Economics Section, the Location and Design Sections, etc. Accident information was also compiled for senior officials of the Department. The London District Regional office obtained several analyses of accidents occurring on highways in their district. The Departments of the Attorney General and Transport were supplied accident statistics on request.

Special accident experience studies were compiled for presentation as traffic safety evidence at fourteen Ontario Municipal Board Hearings in the matter of applications by the Minister for the approval of the closing of certain roads intersecting controlled access highways.

Reports of fatal accidents on the King's Highway were compiled each month, containing information as to the locations of fatal accidents, the type and the manner in which they occurred, i.e. road conditions, weather conditions, etc.

Statistics of all traffic accidents occurring on county roads were compiled in report form and forwarded to all county engineers.

Toward the close of the fiscal year, finalization of accident statistics was almost completed for publication of the manual "Summary of Accident and Fatal Accident Analyses for 1957-58 and 59." This detailed summary of all reportable accidents, accident rates, total property damage, etc., provides information for the listing of Accident Prone Locations for the King's Highway System.

PLANNING SERVICES SECTION

Y. ANDERSEN, Superintendent

Right-of-way Group

Property Requests

A total of 910 property requests were handled, of which 321 were approved as presented or modified and distributed by the Section. 589 requests affected the work program and received little attention other than scanning and addition to our plans.

Subdivisions

A total of 1,144 plans of proposed subdivisions were reviewed and added to our plans. Of the total, 407 plans required recommendations in order to protect the interests of the Department.

Property Sales

587 requests for disposal of surplus lands have been processed.

Official Plans

57 Official Plans (or amendments to same) have been scanned and received our recommendations.

SOUTHWESTERN REGION PLANNING DIVISION—LONDON

C. R. HOPKINS, P.Eng., Regional Planning Engineer

As part of the Department's policy of decentralizing its operations, the Planning Division set up its first Regional Planning establishment in August.

Personnel were transferred from Head Office to the Southwestern Region building in London to join and work with the other Divisions and Branches already established there.

Initially the work undertaken was primarily Location Section field surveying, office draughting, intersection design and the traffic survey work done through the Location Section. This continued to be a large part of the Regional Planning activity but within a few months, as the original Group became established and re-inforced by transfer of additional engineering personnel, the scope of the work was enlarged to include increasing amounts of Program, Traffic and Planning Services work.

Close working relationships were established with the Districts, with the Regional staff, and with municipalities in close proximity, enabling these relationships to be closer than was possible when working from Head Office.

CARTOGRAPHY

C. P. ROBINS, Supervisor

Maps at a scale of 4 miles to 1 inch of Haliburton and the combination of Frontenac and Lennox and Addington were printed from bases revised in 1958.

The bases were revised and maps printed at the same scale as mentioned above of the following combinations: (1) Stormont, Dundas & Glengarry, and Prescott and Russell; (2) Peel, Halton, Dufferin, Wellington and Waterloo; (3) Brant, Elgin, Middlesex, Norfolk and Oxford; (4) Perth and Huron; and of the following single maps: (1) Parry Sound; (2) Lambton; (3) Simcoe; (4) Hastings.

The bases for the combinations Kent and Essex; and Lincoln, Wentworth, Haldimand and Welland, were revised in preparation for printing at a scale of 4 miles to 1 inch.

The leading map companies in the United States were supplied with information concerning new pavements and new highways so as to bring their road maps of Ontario up to date. At the request of the Ontario Motor League their road book and road map were checked over and a number of revisions in pavements and highway numbers were noted on them.

Plans at a scale of 1 mile to 1 inch of Oxford and Prescott and Russell were completed, having been started in 1958. New revised plans of the counties of York and Wellington were completed. A plan of Ontario was started.

Plans of the following townships were re-drawn and brought up to date: Adjala, Albemarle, Arran, Atwood, Bagot, Bertie, Blue, Booth, Brant, Bromley, Bruce, Carrick, Cobden, Conmee, Culross, Dance, Digby, Douro, East Flamborough, East Gwillimbury, East Oxford, Eastnor, Elderslie, Eldon, Front of Yonge, Gillies, Gorham, Greenock, Harvey, Hinchinbrooke, Horton, Howe Island, Huron, Kennebec, Kincardine, Kirkwood, Laird, Lindsay, Loughborough, Matawatchan, McIntyre, McNab, Miller, Morley, Nakina I.D., Neebing, Nelles, North Canonto, North Monaghan, Olden, Paipoonge, Pittsburgh, Portland, St. Edmunds, Ross, Seymour, Shenston, Sherwood, Smith, South Dorchester, Spohn, Stafford, South Canonto, Storrington, Tay, Westmeath, Wicksteed, Wilberforce and Wolf Island.

Plans of the following villages were drawn: Blyth, Chesterville and Sundridge.

Work was done on the following miscellaneous jobs:

1. Revising county and township plans to show new highways and new annexations to the various municipalities.
2. Checking county by-laws.
3. Reviewing subdivision plans.
4. Revising surface sheets for use in the sections and for use in the head office of the Municipal Roads Branch.
5. Revising progress charts and mileage sheets.
6. Using information from (5) to calculate the totals of kinds of pavements in each of the counties and districts for King's Highways and Secondary Highways.
7. Revision of wall maps for various Branches of the Department.
8. Revising the wall map in the bus terminal at Niagara Falls.

Some assistance was given the Information Section in the matter of the D.H.O. exhibit at the Canadian National Exhibition. Work on the exhibit was checked from time to time.

Many revisions were made on the road map bases in preparation for printing the 1960 road map. These consisted of showing new pavements, new King's Highways and Secondary Highways, new place names, new indexes for use by the printer. All printed matter was proofread twice and corrections made before the printer was allowed to use the proofs.

ROAD DESIGN DIVISION

D. G. RAMSAY, P.Eng., Road Design Engineer

H. D. McMILLAN, P.Eng., Assistant Road Design Engineer

Projects pre-engineered, computed and checked included:

Grading projects—in miles

Region	T.C.H.	Dual	Others	Total
Central.....	7.53	18.12	51.99	77.64
Eastern.....	10.75	38.62	64.28	113.65
Northern.....	65.61	8.05	64.34	138.00
North Western.....	66.05	.....	31.11	97.16
South Western.....	.....	16.79	179.76	196.55
TOTALS.....	149.94	81.58	391.48	623.00

Paving Projects—in miles

Region	T.C.H.	Dual	Others	Total
Central.....	1.33	91.59	45.74	138.66
Eastern.....	13.25	31.96	40.15	85.36
Northern.....	87.18	.....	121.01	208.19
North Western.....	58.34	.....	2.92	61.26
South Western.....	.....	8.25	130.40	138.65
TOTALS.....	160.10	131.80	340.22	632.12

Structures

Region	T.C.H.	Dual	Others	Total
Central.....	1	20	9	39
Eastern.....	5	6	1	12
Northern.....	9	1	8	18
North Western.....	6	.....	6	12
South Western.....	.....	19	19	38
TOTALS.....	21	55	43	119

Further decentralization in the Road Design Division took place with the establishment of the Central Regional Road Design office. There are now 247 employees, or 75 per cent of a total staff of 330, located in the Regional Offices. This is an increase of 23 over the previous year.

Considerable time and effort was spent in developing a point system for evaluating the man days required for the various projects in order to determine basic staff requirements.

The Estimating Manual was completed, published and distributed throughout the Department and to Consulting Engineers employed by the Department on design work. It is felt that the completion of this Manual will have a marked effect on the calibre of work emanating from the Road Design Division and will be

invaluable as an aid to standardization of all types of road design throughout the Province. It should also prove to be of great value to the Operations Branch when interpreting the contract data prepared by Designers and Estimators. The Manual is being used as a theoretical textbook for study by the Estimating staff for examination purposes.

The Intersection Design Detail Group produced drawings of 68 channelizations, 31 two-leg cloverleafs and 5 four-leg cloverleafs. A grid of co-ordinates were added to the detailed drawings to facilitate setting-out procedure during construction. The Group prepared a manual detailing the functions of the Group and the detailed calculations involved in their day-to-day operations. This manual was circulated to our Regional offices and to Consultants working on Department pre-engineering.

The use of the electronic computer for design calculations increased, with approximately 450 miles of Road Design projects being processed through the Electronic Computing Centre. In addition, a study was made on the feasibility of using the electronic computer for the plotting of cross-sections and as a result, the cross-sections for a number of Road Design projects were produced in this manner.

A detailed study was commenced on the uses of aerial photogrammetric methods for calculation of earth work quantities. A combination of this facility with the electronic computer seemed to indicate a valuable aid for future work.

Further studies on cost estimating were made and as a result, the Costing Subsection of the Road Design Division were able to produce much more realistic estimates of contract costs. During the entire year, the difference between the total Contractors' bids for road contracts and the cost estimates produced for these contracts was only one per cent. In an attempt to refine the larger unit variations with this difference to a further degree of accuracy, liaison was commenced with the Electronic Computing Section. By regression analysis methods, involving supplying the computer with unit price bids dating back to 1955, it is anticipated that this greater accuracy in cost estimating can be obtained.

Standards giving the rates of superelevation and lengths of spiral transition curves to be used for various design speeds and degrees of curve were approved and incorporated in the Highway Standards Manual. Standards showing the manner in which the superelevation was to be applied were also issued at the same time. Originally two standards for spirals and superelevation were issued, one based on a maximum rate of superelevation of 0.08 feet per foot of pavement width and the other on a maximum rate of 0.06. A change in policy in March 1960 resulted in the dropping of the 0.08 maximum rate and values based on the 0.06 maximum rate are now used in all situations.

A considerable amount of drainage study was carried out by the Road Design staff, particularly in urban areas where proper highway drainage is mandatory. Tables, standards and specifications for stormsewer construction were prepared for the use of concrete and clay pipe under varying types of bedding and fill conditions. A standard basis for stormsewer design was formulated.

In order to preserve as much aesthetic value as possible during construction of our modern highways, procedures were developed for predetermining the necessity of tree removal during the construction of new roads and particularly during the

rehabilitation of existing roads. Combined field inspections for this purpose were started with representatives of the Road Design Division, arboriculturists from the Maintenance Section and district personnel attending.

On the 400 Series of Highways and the Queen Elizabeth Way, median design received considerable study with regard to the effect median width has on traffic operation in opposite lanes, with particular reference to operating safety, reduction of driving boredom, blending the highway with the topography and economy. This study resulted in dual highways being built with the median varying in width from 125 feet to 34 feet and opposite pavement grades varying in elevation up to 8 feet.

On high traffic volume urban-type expressway sections where narrow medians cannot be avoided, a minimum standard width of 10 feet has been adopted and barrier curbs or double steel beam guide rail included to provide additional safety for traffic operation on opposite pavements.



Bridge construction at Vermilion River, Dowling Township, Sudbury District.

BRIDGE DIVISION

A. M. TOYE, P.Eng., Bridge Engineer

The Bridge Division is divided into five sections, as follows: Bridge Planning, Bridge Design, Bridge Control, Municipal Bridge Liaison and Engineering Office Supervision.

Bridge Planning

During the year 150 proposed sites for scheduled structures were investigated and approved. In assessing the suitability of the sites many factors were taken into consideration. The most important of these was the foundation material but profile grade, highway alignment, topographical features and the provision of temporary detours were also considered.

Changes in topography were noted as possible indications of the underlying geological formation and a study of these sometimes suggested alternative sites. Recommendations were made for soil investigations and for hydrological studies.

In addition to these, approximately 30 future sites were checked for feasibility and cost estimates were prepared.

Hydrologic investigations were made for 100 river crossings proposed by the Department and a further 40 studies were carried out for municipalities.

Bridge Design

The past year has seen a reduction in the use of consultants for bridge design as they received only 47 of the 126 new designs started during the year. Comparable figures for the previous year were 98 out of a total of 144.

A total of 141 structure designs were completed during the year of which 56 were by consultants and 85 by the Bridge Design Section. All bridges awarded to consultants are of course designed in consultation with and the designs are approved by the Bridge Division engineers.

The most impressive of these bridges is the 7,000-foot Skyway over the Welland Canal at Homer, near St. Catharines. This was assigned to a group of consultants in order to speed up the start of construction. The bridge will represent the first use of steel box girders in Ontario and will have a cleaner appearance than the arched trusses of the Burlington Skyway.

Plans were also prepared by the Bridge Division staff for some 600 concrete culverts many of which had to be specially designed.

As was expected, the use of the electronic computer in bridge design problems has greatly increased. The computer is now being used for the design of rigid frames, for bridge geometrics on vertical and horizontal curves, for reinforcing steel weights, for influence lines and for other problems where this method is justified. New computer programs are being developed constantly. Two of the most promising are for concrete box culvert design and multi-span girder design.

During the year the re-writing of the design specifications was undertaken. This proved to be a mammoth task and is not yet fully completed.

In addition to designing new bridges many investigations were made on existing bridges and on construction problems in which the design was in question.

At the request of the Traffic Section we also undertook to check the design of highway sign supports. This proved to be a very interesting problem of considerable difficulty because the plans are prepared by many different designers for commercial interests.

Bridge Control

Contracts, estimates and special provision were prepared for a total of 134 structure contracts. In addition to these 41 were prepared for Structural Steel contract.

The total estimated value of these contracts was \$21,674,018 of which \$17,857,349 was for general contracts and \$3,816,669 for Structural Steel Contracts.

A total of 133 structure contracts were awarded during the year, 27 of which were for structural steel consisting of some 10,706 tons.

During the year, 1,360 material requisitions were prepared specifying the quantity and quality of the items costing some \$4,355,000.

Arrangements were also made to have these items inspected by private companies specializing in this work. These requisitions covered a great variety of materials including 15,400 tons of reinforcing steel, 423,000 feet of piling and 40,000 feet of steel handrailing.

In addition to their regular duties such as calculating bridge quantities, preparing perspective drawings and miscellaneous draughting, the draughting group carried out specialized survey work for the Bridge Division on existing structures and new sites.

During the year the construction engineers of the Control Section continued to provide assistance to the Operations Branch in the form of technical supervision of specialized operations. Included in this was the approval of contractor's proposed falsework plans and field inspection of erected falsework, supervision of pile load tests and pile-driving operations when requested, supervision of erection of all structural steel bridges, supervision of casting, stressing and erection of prestressed concrete beams, and assistance in solving numerous field problems as they arose.

The re-writing of Form No. 9 was completed and the revised Form adopted. The Form is under continual review, however, and revisions are made as necessary to keep it up to date.

Municipal Bridge Liaison

The Municipal Bridge Liaison Section processed 608 approvals consisting of 169 bridges, 402 culverts and 37 miscellaneous, the latter consisting mainly of maintenance garages and bridge repairs. The designs submitted were of reinforced concrete, prestressed concrete, structural steel, timber and various combinations of these. Bridge approvals covered 76 rigid frames, and 80 odd beams and slab structures. The size of these bridges varied from single 25-foot spans to multi-spans 800 feet long. The culverts were mainly D.H.O. Standard reinforced concrete with the remainder of corrugated metal or structural plate.

Herewith are some of the various types of bridges approved:

1. Wardell Bridge, Clinton Twp. A slab rigid frame with two 50-foot spans.
2. Huron County — over the Ausable River. A slab rigid frame with two 60-foot spans.
3. City of Stratford — Waterloo St. over the Avon River. An 80-foot "T" beam rigid frame.
4. Perth-Middlesex Boundary Bridge over the Thames River. A steel-plate girder structure with four spans of 92 feet.
5. Town of Brockville — Williams St. over the C.N.R. A three-span continuous prestressed slab.
6. Town of Port Credit — Highway 2 over the Credit River. A three-span continuous steel beam with a concrete slab.
7. Carleton Co. — Kars Bridge over the Rideau River. Five-span continuous steel-beam composite construction. Total length, abutment to abutment, 569 feet.
8. Metro Toronto — Bayview Ave. at Lawrence over the Don River. Six spans of steel deck trusses totalling 838 feet. In addition there were numerous structures in Metro Toronto's Don Valley Parkway and several sections of the elevated portion of the Frederick G. Gardiner Expressway.

Engineering Office Supervision

This section was responsible for the filing and typing duties of the Division; for the maintenance of records and statistics; for personnel administration; for the preparation of technical reports; and for miscellaneous technical duties.

Summary of Bridge Construction

During the calendar year 128 structures consisting of some 17,516 feet of bridging were constructed. Included in these were 9 railway overheads — 4 over the Canadian National Railway and 5 over the Canadian Pacific Railway.

There were 25 structures constructed on the Trans-Canada Highway.

Sixty-two structures were constructed on dual highways, consisting of 33 underpasses, 18 overpasses and the balance being river and stream crossings. These structures were constructed on the following highways:

Queen Elizabeth Way	— 9 structures constructed
Ottawa Queensway	— 9 structures constructed
Highway 400	— 3 structures constructed
Highway 401	— 39 structures constructed
Peterborough By-pass	— 2 structures constructed

A wide range of types and designs were included in these 128 structures constructed; 47 were structural steel bridges of single and multiple spans of such designs as steel beam, steel girder, steel plate girder, steel deck trusses, steel low trusses and steel through trusses; 42 of the reinforced concrete structures were of rigid frame design; 11 of the reinforced concrete structures were designed as concrete beam, concrete girder and concrete box girder, 8 were prestressed concrete.

A complete listing of all structures completed is given in Appendix No. 4.

Not included in this listing are 432 concrete culverts in spans ranging from 4 to 20 feet and costing \$1,455,000.

SERVICES BRANCH

C. A. ROBBINS, B.Sc., P.Eng., *Director of Services*

H. S. HOWDEN, O.L.S., P.Eng., *Assistant Director of Services*

The Services Branch consists of eight sections which provide various "services" to other branches of the Department. The staff of the branch is located partly at Head Office and partly at Regional Offices in Toronto, London, Kingston, North Bay and Fort William.

Under the direction of the Director of Services, the Regional Services Managers are responsible for co-ordinating and expediting the work of the various sections of the Services Branch in their respective Regions. The Regional Services Manager ensures that the policies and the directions of the Section Heads are carried out by the staff of the Services Branch in his Region.

The Regional Services Managers are: — H. A. Aron, O.L.S., Northern Region; D. W. Baird, O.L.S., Eastern Region; N. D. Bennett, O.L.S., P.Eng., Central Region; M. W. Robinson, O.L.S., South-Western Region; D. F. Walton, O.L.S., North-Western Region.

On October 5, 1959, the Documents Section was established within the Services Branch.

On September 1, 1959, the Signs and Buildings Permits Section was transferred from the Services Branch to the Deputy Minister's Branch and has since been transferred to the Legal Branch.

During the year, film strips showing the functions of the Services Branch were prepared. These are used for instructional and orientation purposes.

The eight sections of the Services Branch are: — (1) Documents, (2) Equipment, (3) Land Surveys, (4) Office Services, (5) Property, (6) Special Services, (7) Supply, (8) Tenders.

Documents Section

H. A. Broom, Superintendent

Organized within the year, the Documents Section was established for the purpose of concentrating within a single administrative unit functions heretofore performed separately by the various Branches of the Department.

The Section is divided into four groups: — (1) Correspondence Files, (2) Library, (3) Manuals, (4) Plan Files.

As its name implies, the Section deals with documents in the broadest definition of the term, from a treatise on engineering to a letter recorded in microfilm.

All correspondence and documents submitted to Correspondence Files for file by the various Branches of the Department have been systematically classified and cross-indexed to facilitate prompt and easy reference. All books, brochures and periodicals in the possession of, or subscribed to by, the Department have been catalogued by the Library, and new volumes acquired as needed.

The Manuals Group has prepared, edited or revised manuals as required; has

edited a number of circulars and memoranda; has assisted in the preparation of various brochures and has designed forms requisite to the Department's business.

The Plan Files Group has maintained indexed and cross-referenced files of Department plans and field notes so that data of this type are readily available to Department personnel. Through the facilities of the Office Services Section, it arranges for the production and distribution of white prints, photostats, photo copies, etc., of specified plans as a service to municipal bodies and the public in general.

The Documents Section also has available film strips, with sound, for educational and training purposes. These films and projection equipment are loaned to Branches of the Department. On occasion, an operator is supplied.

Equipment Section

L. Westlake, Superintendent

Head Office Supervisors and Highway Equipment Supervisors of the Equipment Section were engaged throughout the year in the preparation of specifications, inspection of all major equipment purchased, development of new machines, the supervision of maintenance of all Departmental equipment, and the operation of two garages, the Tree Saver Unit, and the Mobile Mechanical Training School.

The Mobile Training School was set up at the International Ploughing Match at Peter's Corners in October, as a Departmental exhibit. Since then it has been operated as a training school for mechanics and has been moved from District to District as courses and examinations are scheduled. The Section assisted the Deputy Minister's office on the preparation of eight displays which were exhibited at 42 Fall Fairs throughout the Province.

The new Tree Saver Unit was received in November, and since December this equipment has been operated by the Equipment Section. The Head Office Garage (District 42) checked and serviced all new equipment and, when necessary, modified equipment before delivery to the field. One new Dual-Lane Zone Striper was completely engineered and built, and one Snow Blower unit was produced.

The Superintendent of Equipment presented a paper illustrated by slides on "Development and Use of Winter Maintenance Equipment" in Ontario at the Canadian Good Roads Association convention.

The Section maintained the roads and parking areas for Head Office and the Department of Transport at Downsview.

During the winter, four graders, two snow blowers, and six plough trucks from the Head Office and Regional Pools were used by the Southern Districts to supplement local equipment in emergencies.

The Equipment Study Committee visited Huntsville, Stratford, Hamilton and Ottawa and reported on the usage of equipment in those Districts. The Section provided members for the Vehicle Accident Committee, the Stores Procedure Committee, the Instrument Evaluation Committee, and Equipment Stock Analysis Committee.

Advice regarding equipment and usage was provided to the Municipal Branch on request.

The perpetual inventory of all D.H.O. equipment maintained by this Section was continued with the assistance of Regional personnel.

The following equipment was operated by the Department during the year:

Augers, Earth.....	4	Plants, Asphalt, Large.....	1
Benders, Bar.....	4	Plants, Crushing.....	2
Blowers, Truck Mounted.....	13	Plants, Port. Screening.....	5
Blowers, Tractor Mounted.....	3	Plants, Stationary Power.....	46
Carryalls.....	1	Ploughs, One-way.....	638
Cars, Rail.....	2	Ploughs, Reversible.....	30
Collectors, Dust.....	1	Ploughs, Vee.....	419
Compressors.....	204	Pumps, Dispensing.....	117
Conveyors.....	9	Rollers.....	68
Cranes, Hydraulic.....	5	Roughness Machine	
Cranes, Yard.....	4	(Road Bump Test).....	2
Cranes, Truck Attachments.....	2	Sand, Bodies, Special.....	362
Chippers.....	2	Sand Driers.....	18
Carriers, Supply.....	1	Screens, Vibrating.....	1
Distributors, Emulsion.....	188	Scales, Highway.....	59
Ditchers.....	2	Spray Painting Units Portable.....	4
Drills, Core.....	2	Sprayers, Weed.....	26
Eductors.....	7	Stripers.....	18
Ferries.....	7	Seeders, Hydro.....	17
Finishers, Asphalt.....	3	Shovels, Hydr'c Swing Type.....	1
Gradalls.....	9	Shovels, Power.....	8
Gradebuilders.....	78	Swamp Buggy.....	1
Graders, Leaning Wheel.....	19	Spreaders, Mulch.....	27
Graders, Power.....	324	Sweepers, Power.....	18
Generators, Steam.....	86	Trucks.....	1,565
Hydraulic Units, Electric.....	145	Tractors, Track.....	80
Hydraulic Units, Full.....	443	Tractors, Wheeled.....	407
Hydraulic Units, Hand.....	4	Trailers.....	336
Hydraulic Units, Power.....	9	Welders, Arc.....	51
Loaders.....	103	Wings, 10' Left.....	1
Maintainers.....	34	Wings, 10' Right.....	57
Maintainers, Multiple Blade.....	2	Wings, 11' Left.....	4
Mixers, Asphalt (Hot).....	3	Wings, 11' Right.....	72
Mixers, Cement.....	25	Wings, 12' Left.....	5
Mixers, Cold Patch.....	22	Wings, 12' Right.....	563
Mixers, Paint and Bead.....	17	Wings, 14' Right.....	22
Mixers, Pulvi.....	18	Zone Line Testing Machines.....	1
Moto Pavers.....	1	Miscellaneous Equipment	
Planers.....	4	(Not Listed).....	2,764
Plants, Asphalt, Small.....	1		
INSTRUMENTS:		Projectors.....	14
Binoculars.....	47	Transits.....	588
Cameras.....	286	Trumeters.....	19
Levels.....	571	Traffic Recorders.....	*257
Print Copiers.....	7	(Not on Inventory Before)	

The new equipment listed below was purchased to replace obsolete and worn out equipment and to meet the need for additional equipment. It is included in the list of equipment operated as shown above.

Blowers, Tractor Mounted.....	1	Ploughs, One-way.....	81
Blowers, Truck Mounted.....	1	Ploughs, Reversible.....	9
Carriers, Supply.....	1	Ploughs, Vee.....	5
Compressors.....	17	Rollers.....	6
Chippers, Wood.....	2	Roughness Machines	
Distributors, Emulsion.....	6	(Road Bump Test).....	2
Finishers, Asphalt.....	1	Seeders, Hydro.....	1
Gradalls.....	1	Spreaders, Mulch.....	1
Graders, Power.....	26	Tractors, Track.....	8
Hydraulics, Electric.....	45	Tractors, Wheeled.....	42
Hydraulics, Full.....	33	Trailers.....	91
Loaders, Power.....	19	Trucks.....	226
Mixers.....	2	Wings, 12' Right.....	59
Plants, Stationary Power.....	8		
INSTRUMENTS:		Projectors.....	14
Binoculars.....	2	Transits.....	30
Cameras.....	182	Trumeters.....	1
Levels.....	50	Traffic Recorders.....	48

Land Surveys Section

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section is responsible for making all land surveys and for the preparation and registration of all plans required for the acquisition or disposal of land and for the assumption, reversion, designation and closing of highways.

The Section obtained registration of 3,975 plans in the proper Land Titles or Registry Offices during the year. These figures show a substantial increase in the number of plans prepared with no appreciable increase in the number of miles surveyed. This was occasioned by a policy of reducing the physical length of the plans, and, in many cases, of preparing an individual plan for each property.

During the fiscal year, 568.40 miles of highway were designated as controlled-access highways. This figure includes Highway 401 which was revised and consolidated from Windsor to the Quebec boundary. The total mileage of controlled-access highways in the Province now stands at approximately 1,212 miles. One hundred and twenty-six interchange areas were designated as controlled-access highways. No mileage was added to the figures quoted above for these areas. The details appear in an Appendix to this report. Also, during the year, 109.7 miles of streets connecting parts of King's Highway or Secondary Highways through numerous cities, towns and villages were designated as Connecting Links. Connecting Link Agreements covering 117.8 miles of streets were entered into with municipalities.

Six training courses were conducted for Land Surveys Section staff during the year. These courses were attended by 87 candidates, 60 of whom qualified. In addition, 176 employees, who did not attend courses, took qualifying examinations. Of these, 98 passed. The Section is continuing its apprenticeship program to qualify employees as Ontario Land Surveyors, and, during the past year, four apprentices successfully passed the final examinations.

Before the close of the year, the decentralization of the Land Surveys Section was completed. The five Regions, with field, draughting and clerical staff, now function as separate units under the direction and control of a small Head Office group. The Head Office group is composed of staff working on administration, accounting, regulations, orders-in-council and special draughting assignments.

Appendices in this Report give details of Controlled-access Highway plans and designations and reversions of sections of the King's Highway and Secondary Highway systems.

TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
Plan Types A-H Inclusive — Acquisition of Lands			
"A"	Land Plans	3,102	197,400
"B"	Amended Land Plans	132	.....
"C"	Land Plans Acquiring Limited Interest.....	111	5,426
"D"	Plans of Abandonment	118	16,722
"E"	Crown Land Plans.....	110	93,102
"F"	Amended Crown Land Plans.....	5	.....
"G"	Crown Land Abandonment Plans.....	.....	.....
"H"	Navigable Waters Protection Act Plans (Crown).....	7	5,827
Plan Types I-M Inclusive — Assumption of Existing Highways			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway.....	12	24,243
"J"	Amended Preliminary Assumption Plans.....	5	.....
"K"	Assumption Plans.....	91	156,888
"L"	Assumption Plans.....	41	72,358
"M"	Amended Assumption Plans.....	13	.....
Plan Types N-P Inclusive — Designation of Highways			
"N"	Proposed Highway Plans	17	26,311
"O"	Highway Plans.....	86	240,299
"P"	Controlled-access Highway Plans.....	2	810
Plan Types Q-T Inclusive — Transfer and Closing of Highways			
"Q"	Reversion to Road Authority.....	5	14,590
"R"	Transfer to Municipality.....	73	54,894
"S"	Closing of Road Plans to Illustrate Route Closed by Order-in-Council.....	49	31,701
"T"	Road Closing Plans (Ontario Municipal Board).....	1	.....
Plan Types U-X Inclusive and others — Miscellaneous and Special Plans			
"U"	Plans to Illustrate Descriptions.....	539	82,788
"V"	Survey Plans of Boundaries — Supplementary.....	181	154,188
"W"	Indian Affairs Plans.....	3	6,180
"X"	Connecting Link Descriptions and Agreements: (Designation)	159	109,660
	(Agreement)		117,750
	Miscellaneous Plans.....	50	9,761
TOTALS.....		4,912	1,420,898

Office Services

F. C. W. Flegg, Superintendent

The Office Services Section located in the new Administration Building, Downsview, is responsible for the procurement and distribution of office supplies, furniture, office equipment, stationery and medical supplies to all Districts, Branches and Sections of the Department. During the fiscal year, Office Services processed 22,306 requisitions.

The Reproduction Whiteprint Units were centralized under the supervision of Office Services during the fiscal year. These Units produced 2,220,000 linear feet of whiteprint.

Office Services is responsible for providing Postal Service to all Department of Highways Offices in the Metropolitan Toronto area. In addition, it provides Guide Service in the Downsview buildings.

The Section was assigned the responsibilities of maintaining in the Metropolitan area, the Teletype Service which connects Head Office with all District and Regional offices.

In general, a normal supply of all items for which the Section is responsible was maintained throughout the year.

Property Section

H. Barry, Superintendent

The Property Section is responsible for the acquisition of all property and (or) property rights required for highway purposes, and for the settlement of claims to compensation arising therefrom. In addition, the Section is responsible for the management of surplus property acquired by the Department and ultimately for the disposal of such property.

During the past fiscal year, the Section has progressively extended the policy of appraising property before opening negotiations with the owners. The results, so far, have been encouraging. It has been possible, under this policy, to establish the basic value of properties and to determine the amount of compensation considered just. In addition, we have been gradually establishing a base from which research in the subject of land economics may be made.

To date, the decentralization program has gone forward smoothly and is operating effectively. In conjunction with the Personnel Branch, the Section has been organized and a basic establishment which functions along more realistic lines is now operating.

It has not yet been possible to decentralize the Fort William Region administrative staff due to space limitations. This staff is operating on a Regional basis but is located at Downsview.

During the year, 5,024 Agreements were negotiated as compared with 4,249 in the previous year. Property payments amounted to \$9,191,568.91.

At the close of the fiscal year the Department owned 2,545 surplus properties of which 407 are deemed unsaleable for various reasons, such as being landlocked. Revenue from sale of property was \$1,310,045. The policy of selling surplus property by public auction has brought obvious benefits, both financial and administrative.

Encouraging results have been obtained from a combined effort by Land Surveys, Planning and Design, Operations and the Property Section to complete outstanding expropriations.

The Regional Committees established to review *periodically* deferred Agreement payments have also produced satisfactory results.

Staff-training programs were developed to cover new Departmental procedures e.g., the Single Plan system and the decentralization of the accounting function. Two courses were held for Probationary Property Agents and one for potential Appraisers.

Special Services Section

F. E. Cavell, Superintendent

The Special Services Section functions as liaison between the D.H.O. and the Department of Public Works. The Section is responsible for the allocation of space in all buildings occupied by the Department of Highways and for recommending the erection or acquisition of additional buildings. It also plans for the efficient layout of the various systems of communication.

The following buildings were completed by the Department of Public Works in 1959-1960:

District 4	Hamilton	— 11-bay patrol garage at Burlington Beach
District 7	Port Hope	— 7-bay patrol garage at Lindsay
District 8	Kingston	— 4-bay patrol garage at Arden (started in 1958-59)
		— 6-bay patrol garage at Marysville
		— 5-bay patrol garage at Bloomfield
District 9	Ottawa	— 5-bay patrol garage at Carleton Place
		— 4-bay patrol garage at Winchester
Toronto	Head Office	— addition to Central Stores Building at Downsview (started in 1958-59)
		— Administration Building, Downsview

Buildings begun during 1959-60 and under construction by the Department of Public Works as of March 31, 1960 were:

District 4	Hamilton	— District Office at Burlington
District 18	Sault Ste. Marie	— 4-bay patrol garage at Wawa

The Special Services Section also carried out the following operations:

1. Planning completed on preparation of 34 building sites.
2. Recommended for approval 1,102 requests for repairs to D.H.O. buildings.
3. Made 358 inspections of D.H.O. buildings and building construction work.
4. Recommended for approval improvements in 56 D.H.O. garage buildings.

The Section's planning function produced the following:

1. Space research data and working drawings for new standard District Offices to be erected for District 4 at Burlington and District 9 at Ottawa.
2. Proposal and working drawing for 1½ storey patrol yard dwelling.
3. Working drawings of space layouts Administration Building, Downsview.
4. Final layout plans of all office areas in the new Administration Building.
5. Planning of all moves from Downtown D.H.O. offices to Downsview.
6. Plans for alterations to Paint Shop and Display Shop, Downsview.
7. Plot plans (layout) for 34 Patrol Yards.
8. Designed and produced plans for frame garage for D.H.O. use at Hornepayne.

Completion of New Administration Building and Details of Move from Downtown to Downsview

By December, 1959, the completion of the Administration Building had been so nearly effected as to make practical the movement of the Department's staff from the Parliament Buildings, and four other locations, to Downsview. The initial move began during the afternoon of December 18 and continued, with a minimum interruption to service, until March 31 when the last group was located at the new Downsview offices.

To complete so large a transfer of persons and equipment without materially disrupting efficiency demanded careful planning, necessitating as it did, an accurate roster of the employees involved, and, more particularly, a concise enumeration of furniture and other materials to be moved. Many incidental details, such as enlarging the cafeteria to accommodate the increase in personnel, and relocating groups already occupying the Laboratory Building, had to be planned for and executed.

Relocation at Downsview placed the greatest strain upon the group charged with maintaining uninterrupted communication systems. Telephones had to be installed before the arrival of personnel and this required a systematic allocation of local call numbers to prevent confusion. The magnitude of the task may be gauged by the fact that at one time nine crews from the Bell Telephone Company were at work in the buildings. The telephone equipment now provides for the efficient conduct of the business of the Department.

The move created a modification of the teletype network. Units at Queen's Park, Davenport Road, Jarvis Street and Bay Street were eliminated and the facilities at Downsview were enlarged to accommodate the increased traffic.

During the past year, radio networks were installed at London, Hamilton, Owen Sound, Toronto, Kingston and Ottawa. Results to date have been satisfactory. The greater measure of centralized control has reduced the movement of equipment to a minimum, and increased the efficiency of patrol vehicles.

The Section is continuously alert to the development of new techniques in the field of communications while constantly seeking refinements to those already operative. An analysis is being made as to the effectiveness of the radio network and consideration is being given to the possibility of feeding data from the teletype machines directly to the Electronic Computing Section by mechanical means.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section provides the material procurement and distribution service to the Department. In addition to buying materials for both maintenance and construction work and expediting delivery of these as required by the Operations Branch, a Central Stores service is operated at Downsview. A complete emergency bridge service is also provided. Bridge material is strategically located at five Bailey Bridge depots to facilitate delivery.

Orders exceeding \$30,000,000.00 were placed during the year for construction, maintenance and stock materials, and for equipment.

To protect the construction program against steel shortages, an inventory of about 5,000 tons of steel piling, structural beams, and reinforcing steel has been procured and is in stock at Downsview. A reinforcing steel fabrication service is operated in conjunction with this stockpile and is of great value in providing immediate delivery of reinforcing steel for contracts during emergencies.

The use of Bailey bridges during construction work has continued to expand. During the year, 54 bridges were erected. A further 43 structures, having served the purpose for which they were erected, were dismantled and the material returned to stock in the depots. At March 31, 1960, there were 133 Bailey bridges in use on highways throughout the Province.

Additional and replacement Bailey bridge parts to a value of \$100,000 were purchased during the year. A continuous program of testing and repairing parts is carried out in each of five Bailey bridge depots. Over 1,000 tons of Bailey bridge components were repaired, cleaned and painted during the year.

The Supply Section arranged and conducted 262 sales to dispose of surplus and obsolete equipment and materials. A revenue of \$295,000 was realized from this source. Practically all used equipment was sold at public auction. The response from the public to these auction sales is considered excellent.

Supply Supervisors continued their scrutiny of procurement methods and material distribution at District level.

A program for the adjustment of inventories of materials held in District stocks was instituted. Supplies of equipment repair parts were adjusted in many Districts to provide smaller, more active inventories. At the year end, the value of material held in District inventories was \$2,651,000. Inventory held at Central Stores was \$1,554,000. Shipments to the various Districts from Central Stores totalled \$2,175,000 during the year.

Tenders Section

W. T. Whittle, Tenders Secretary

The Tenders Section is responsible for the distribution of tendering material and for the processing of tenders on D.H.O. engineering projects, material and equipment purchases, property sales, and sale of obsolete equipment and material.

During the 1959-60 fiscal year, the Department of Highways published a loose leaf manual of "Specifications and General Conditions of the Contract." This manual was made available to the general public for a fee of \$5.00 per copy. The Tenders Section assumed responsibility for distribution of the manual and for the collection of fees.

A detailed directory of contractors and suppliers was compiled by the Tenders Section and distributed to Departmental personnel in November 1959.

Early in 1960, the Tenders Section was moved to the Laboratory Building at Downsview. This change of location made it necessary to institute revised procedures to ensure the prompt delivery of all mailed tenders to the Tenders Secretary. Tenders were called as follows:

(a) Engineering Contracts

Contracts processed	396
Contracts awarded	390
Tendering material released (tender forms only)	18,886
Tendering material released (plans, profiles, etc.)	2,976
Net tenders processed	2,424
Average number of bids per contract	6.12

(b) Engineering Contracts — Invitation Bids (Contracts less than \$10,000 in value)

Invitation contracts processed	37
Tendering material released	242
Net tenders processed	146
Average number of bids per invitation contract	3.95

(c) Property Sale Transactions (Public Tender)

Sales processed.....	12
Net tenders processed.....	7
Average number of bids per sale.....	.58

(d) Material Requirements

Enquiries processed.....	1,445
Net tenders processed.....	7,766
Average number of bids per enquiry.....	5.37

(e) Obsolete Material Sales

Number of sales processed.....	57
Net number of tenders processed.....	169
Average number of bids per sale.....	3

PERSONNEL BRANCH

J. POGUE, *Director of Personnel*

The Personnel Branch administers the selection and engagement of personnel, staff movements, training, organization and classification, personnel records, the staff establishment of Branches, and the departmental safety program.

During the year, the Branch moved from its former location at 85 Eglinton Avenue East, in Toronto, to the new offices at Downsview. The consolidation of the Department effected at that time has enabled the Branch to give faster and better service than was formerly possible.

Concurrent with the move, the Branch assumed full responsibility for the parking of employee vehicles at Downsview and for the smooth flow of traffic in and out of the area at the beginning and end of the business day, involving approximately 900 vehicles.

During the year an employee appraisal system was designed and introduced. Perhaps the most important factor in this scheme is the requirement that all appraisals must be discussed with the employee by the supervisor making the appraisal. It is expected that this will improve both the efficiency of the Department and the morale of the employees.

Recruitment Section

It is the responsibility of the Recruitment Section to consult with Branch Heads and District Engineers to determine employment requirements and then carry out the necessary recruitment and selection program. This Section also carries out all the necessary steps to arrange transfers within the Department and also transfers to and from other Departments of the Government.

Between April 1, 1959, and March 31, 1960, there were 6,748 replacements and additions to staff. This figure includes 4,269 seasonal workers and 655 students.

The Recruitment Section hired 515 persons, the remainder of those hired being recruited locally by the Regional and District Offices. The staff engaged by the Recruitment Section was allocated as follows:—

Deputy Minister's Branch	52
Personnel Branch	14
Services Branch	119
Planning & Design Branch	151
Municipal Roads Branch	4
Chief Engineer's Branch	97
Financial Comptroller's Branch	78
TOTAL	515

Apart from counselling interviews the staff of the recruitment section during this period conducted 3,658 interviews with applicants seeking employment.

During the fall of the year this section carried out interviews with the graduating class in Civil Engineering at Toronto and Queen's Universities. The response of the students was most encouraging and little difficulty was experienced in filling our requirements for 1960.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

At the end of the fiscal year the Department's work force was 12,683 and was distributed as follows: (The figures for the fiscal years 1956-57, 1957-58 and 1958-59 are also shown for the purposes of comparison)

	1959-60	1958-59	1957-58	1956-57
Minister's and Deputy Minister's Offices.....	274	240	190	138
Financial Comptroller's Branch.....	297	277	238	202
Services Branch.....	1,261	1,250	1,156	1,046
Planning and Design Branch.....	1,030	1,039	927	755
Operations Branch.....	9,672	9,994	9,127	8,327
Personnel Branch.....	49	65	52	41
Municipal Roads Branch.....	100	94	75	67
TOTALS.....	12,683	12,959	11,765	10,981

The total work force of 12,683 includes all salaried and hourly-rated employees and was grouped as follows:

	1959-60	1958-59	1957-58
Permanent and Temporary Staff.....	4,671	4,185	3,499
Casual Staff.....	6,489	6,457	5,398
Labour.....	1,523	2,317	2,868
TOTALS.....	12,683	12,959	11,765

By occupation the employees were grouped as follows:

Clerical and Stenographers.....	1,993
Graduate Engineers.....	376
Engineer's Assistants.....	3,000
Draftsmen.....	677
Skilled and Unskilled Labour.....	5,834
Others.....	803
TOTAL.....	12,683

During the year 41,504 personnel transactions were carried out by the Personnel Branch. These were as follows:

New Appointments.....	6,910
Terminations.....	7,186
Salary and Other Record Changes.....	27,408
TOTAL.....	41,504

This figure includes annual salary merit increases for all employees effective April 1, 1959, plus the general salary revision awarded on October 1 and December 1, 1959, to all employees.

Organization and Classification Section

This Section is responsible for administering and approving, or recommending, to the Civil Service Commission for approval, changes in wages, salaries and

classifications and for assisting in the development of organizational plans for the various Branches, Districts and Sections in the Department, and for administering the control of establishments within these organizations; for the preparation of job descriptions and manuals, and for rendering advice and assistance to the supervisory staff of the Department in the fields of organizational principles and practices, and a wide variety of other related personnel matters. Appointments to the Temporary and Permanent staffs of the Department are also processed by the Section.

During the year further organizational studies were made or continued. One result of this work was the issuing of an organization chart indicating the standard District organization, together with the classifications assigned to the various positions.

A major project completed during the year was a complete survey of the positions in the District Maintenance organizations. As a result of this Survey, conducted over a lengthy period, during which the opinions of all our District and Maintenance Engineers were canvassed, a job ranking chart, together with proposed salary range adjustments, was produced.

This was discussed with Head Office officials, and, after general agreement had been reached, a proposal to implement the necessary changes was submitted to the Civil Service Commission. No approval had been received at the end of the fiscal year.

In addition, proposals were submitted to the Civil Service Commission affecting the staff at the Burlington Bay Skyway and the stockkeeping staffs of the Department.

Further studies were in progress concerning Highway Equipment Operators, Engineering Office organization, Forestry Crews and Bridge Crews.

The Section participated in studies for the control of establishment in the various Branches and Districts.

The year also saw the appointment of the remaining four Regional Personnel Representatives, which meant that the Personnel Branch was now in a position to provide personalized service to all District Engineers, with all the attendant benefits which this brought about.

Due to the concentration of the Head Office group at Downsview, together with the decentralization program in effect in some Branches, a number of organizational changes were made which required the attention of the Section. This entailed the re-evaluation of existing positions affected, and the evaluation of new positions created by the changes.

Amongst the major changes were the formation of the Administration Branch and the establishment of the Legal Branch. Numerous changes took place throughout the year in the Planning and Design, Services and Financial Comptroller's Branches which were reflected in the work of the Section.

At the request of the Civil Service Commission, the Section commenced the preparation of class specifications for classes used only by the Department of Highways. These were to be submitted to the Commission for final editing and for publication in the Commission's Manual of Class Specifications.

Due to the general revisions of salary awarded to employees in October and December, 1959, an extra burden was thrown on the Section. However, this revision was successfully processed without delay.

Appointments to the Permanent and Temporary Staffs of the Department

continued at an accelerated pace. The number of appointments to staff which were made was:

Casual to Permanent.....	580
Temporary to Permanent.....	221
Casual to Temporary.....	25
TOTAL.....	826

Training Section

This Section is responsible for establishing and maintaining training courses as required for the more efficient operation of the Department.

Most of the training courses conducted by the Training Section took place during the fall and winter months when the reduced construction program enabled employees to attend courses.

During the period from April 1, 1959, to March 31, 1960, the following Branches conducted training courses, the number and extent of which indicates the magnitude of the Department's Training Program.

Branch	Number of Courses	Number of Candidates Taking Courses
Services.....	44	376
Financial Comptroller's.....	4	102
Operations.....	18	444
Planning and Design.....	8	151
Personnel.....	1	36
TOTALS.....	75	1,109

In conjunction with these courses, promotional examinations for Chainmen to Rodmen, Survey Technicians 1 to Survey Technicians 2 and Junior Computers, were held in the District and Regional Offices by the Operations Branch, the Planning and Design Branch and the Services Branch in which a total of 420 employees took part.

The Operations Branch held a promotional examination in the District Offices for Junior Inspectors with 119 employees participating.

In September of 1959 the Services Branch obtained a mobile training unit in order to provide Automotive Mechanic training courses and Trades Tests which were to be held in the Districts. This unit has also been used for training Highway Equipment Operators and Instructors as well as Shop Foremen and has helped to reduce the cost of this facet of the Department's Training Program.

This Section is also responsible, under the direction of the Training Committee, for the co-ordination of the Engineers in Training Program in which selected junior professional engineers undergo a systematized job rotation program to bring them to the point of greatest usefulness to the Department in the shortest possible period of time.

As mentioned previously, 1,109 employees received training in Departmental courses during the year. Some of the courses that were held were as follows:—

Rodmen to Junior Instrumentmen courses, Junior Instrumentmen to Instrumentmen courses, Instrumentmen to Senior Instrumentmen course, Advanced Asphalt Inspectors course, Advanced Concrete Inspectors course, Advanced Grade Inspectors course, Inspector 2 to Inspector 3 courses, Junior and Senior Accountants courses, Municipal Road Auditor's course, Junior Draughtsmen

to Draughtsmen 1 courses, Property Appraisers course, Property Agents course, Mechanic 1 and 2 courses, Estimators course, Party Chief course.

Where it is found that specialized training will be advantageous in the performance of the Department's work, subject to approval of the Civil Service Commission selected employees are permitted to attend specialized courses not conducted by the Department.

The Department's Training Program has proved to be very successful in overcoming the shortage of qualified personnel and has not only improved the quality of work but also the morale of the staff and has helped to reduce employee complaints and grievances.

Departmental Council

The Departmental Council convened for nine meetings in the period from April 1, 1959, to March 31, 1960. During this time an election was held and a new Council took office, in accordance with amended Regulations 15, 16 and 17, of Ontario Regulations 135/53, Public Service Act.

The 33 District and Branch Councils continued to operate in an effective manner with submissions being made to the Departmental Council on many and varied subjects.

The active functioning of the District and Branch Councils made for the continued successful operation of the Departmental Council with many subjects being studied and recommendations made to the Joint Advisory Council.

Regulations made under the Public Service Act provided for a Grievance Procedure to be established. Pursuant to Regulation 5 the Deputy Minister designated the Departmental Council to hear all Head Office employee grievances. He also designated the District Councils and District Engineers to hear grievances within the respective Districts and the Regional Councils with the Regional Services Managers to hear grievances within the respective Regions.

Safety Section

On April 1, 1959, a Safety Section was established in the Personnel Branch. This Section is active in all fields of safety, such as personal injuries, motor vehicle accidents, fire prevention and first aid training.

In January, 1960, the Head Office Motor Vehicle Accident Committee was transferred from the Equipment Section of the Services Branch to the Personnel Branch.

During the period September 30, 1959, to October 6, 1959, a forty-hour course in "Accident Control for Supervision" was given in the training school at Downsview. Thirty-six members of Department of Highways staff including the District Equipment Operator Instructors from the Districts and members from Materials and Research, Land Surveys, Location Surveys and Personnel Branch attended the course. At the end of the course, each member was required to write a Safety Examination. The Safety Section also conducted safety meetings and inspections in some Districts in conjunction with the District Equipment Operator Instructor.

The introduction of the Department safety program and safety training has helped to reduce the personal injury frequency rate for the Department from 36.69 to 30.41 at the end of the fiscal year 1959-60. It is expected that, as the safety program becomes more effective, this figure will be progressively reduced.

MUNICIPAL ROADS BRANCH

J. V. LUDGATE, P.Eng., *Municipal Engineer*

J. P. HOWARD, P.Eng., *Assistant Municipal Engineer*

The increase in expenditures on municipal roads which was a natural outgrowth of the post-war expansion period continues to be evident as indicated in the following table which summarizes municipal expenditures and Departmental aid over the past seven years:

Expansion of Departmental Aid to Municipalities (in \$1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1953	\$ 54,452	\$27,190	\$1,759	\$28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,411	62,412	7,880	70,292

During 1959 a study of the functions and operations of the Municipal Roads



Swamp excavation along Development Road 384.

Branch was carried out to determine how it could best be re-organized to keep abreast of current developments and meet the changing needs of the municipalities. Based on the findings of the study the Head Office staff has been expanded and reorganized into four sections, i.e., subsidies, direct expenditures, planning and research, plans approval.

SUBSIDIES SECTION

P. D. PATTERSON, P.Eng., Subsidies Engineer

The processing of expenditure by-laws submitted by municipalities and Indian Reserves, preparation of estimates in connection therewith, approvals of contracts and purchases are handled by this section.

The following table shows the distribution of expenditures and subsidies in 1959:

Corporation Status	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metropolitan	297.01	\$ 20,700,000.00	\$ 18,233,803.09	\$ 9,166,901.55
County*	9,431.09	34,845,190.00	31,478,080.94	17,094,520.86
Township†	51,233.82	45,045,766.00	41,789,335.40	23,376,726.39
Urban	8,283.31	40,714,074.00	32,890,747.85	12,774,059.54
TOTALS	69,245.23	\$141,305,030.00	\$124,391,967.28	\$ 62,412,208.34

* Includes Suburban Road Commissions.

† Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

Under authority of the Municipality of Metropolitan Toronto Act, subsidies are paid by the Department on expenditures made on roads under the jurisdiction of the Municipality of Metropolitan Toronto. Breakdown of 1959 expenditures is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$12,255,893.68	\$ 1,288,114.04	\$13,544,007.72
Bridges and culverts.....	3,103,028.70	195,920.35	3,298,949.05
Winter control.....		1,390,846.32	1,390,846.32
TOTAL APPROVED EXPENDITURE....	\$15,358,922.38	\$ 2,874,880.71	\$18,233,803.09

In addition to normal maintenance of Metro Roads System, the following works were carried out or initiated in 1959:

Structures completed.....	7
Structures under construction.....	14
New roads completed:	
(Bayview Avenue extension 3.5 miles, and 0.4 miles of the F. G. Gardiner Expressway).....	3.90 miles
New roads under construction.....	5.25 "
Existing roads reconstructed.....	1.25 "
Pavement widening completed.....	2.40 "
Pavement widening under construction.....	4.32 "
Resurfacing of gravel roads.....	6.25 "
Resurfacing of pavements.....	10.50 "
Intersection improvements.....	15
Widening of overpasses.....	1
Major repairs to bridges.....	3

COUNTY ROADS

(Part IV, The Highway Improvement Act, 1957)

Details of expenditures and subsidy listed by counties will be found in Appendix No. 0 to this report. The following is a summary of total expenditures including those on Suburban Roads:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$17,500,327.22	\$ 6,782,844.73	\$24,283,171.95
Bridges and culverts.....	4,260,013.88	258,254.00	4,518,267.88
Winter control.....		2,676,641.11	2,676,641.11
TOTAL APPROVED EXPENDITURE.....	\$21,760,341.10	\$ 9,717,739.84	\$31,478,080.94

Principal items of work carried out during the year on county and suburban road systems are summarized below:

Construction Items:

1. New or rebuilt gravel and stone surface.....	403.5 miles
Low cost bituminous surfaces.....	244.6 "
Pavements.....	207.4 "
COMPLETED ROAD CONSTRUCTION.....	855.5 miles
Graded to standard cross section.....	318.9 "
2. Bridges (10' span and over) — Concrete, 102; Steel, 13; Timber, 4.	
TOTAL.....	119
Culverts (under 10' span) — Concrete, 85; Metal Arch, 55; Timber, 2.	
TOTAL.....	142
Pipe culverts installed.....	4,548

Maintenance Items:

1. Roadside ditching.....	232.7 miles
Bituminous surface treatment.....	626.5 "
Dust prevention with oil.....	433.5 "
Dust prevention with calcium.....	2,334.3 "
Clay gravel stabilization.....	133.5 "
Resurfacing — Pit-run gravel.....	128,000 cu. yds
Crushed gravel.....	588,391 " "
Crushed stone.....	156,915 " "
2. Snow control — Mechanical equipment operations.....	9,352 miles
Snow fence protection.....	1,283 "
3. Weed and brush control — By spraying.....	5,758 "
By cutting.....	5,686 "
4. Repaired bridges.....	118
Repaired culverts.....	541

Additional details regarding county road mileages, types of surface, expenditures and subsidies appear in Appendices to this report.

COUNTY SUBURBAN ROADS

(Part V, The Highway Improvement Act)

Thirty-four suburban road commissions have to do with a specified mileage of roads leading to and from the cities and separated towns. Particulars concerning their 1959 operations are summarized as follows:

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	35.00	\$ 213,301.59	\$ 122,205.09
Carleton.....	Ottawa.....	107.40	699,914.96	403,126.43
Elgin.....	St. Thomas.....	30.00	138,935.93	90,132.53
Essex.....	Riverside.....	4.00	25,700.40	12,850.20
	Windsor.....	49.00	394,394.70	197,746.08
Frontenac.....	Kingston.....	43.60	103,936.47	52,836.50
Grey.....	Owen Sound.....	34.70	84,935.41	56,106.75
Hastings.....	Belleville.....	14.50	45,498.58	25,379.70
Kent.....	Chatham.....	24.35	61,298.92	31,447.44
Lambton.....	Sarnia.....	23.76	302,849.84	212,519.66
Lanark.....	Smiths Falls.....	6.00	9,568.55	4,784.28
Leeds and Grenville.....	Brockville.....	18.90	42,518.23	21,291.00
	Gananoque.....	8.80	13,072.89	6,635.72
	Prescott.....	2.90	11,506.90	5,753.46
	Smiths Falls.....	5.30	9,322.72	4,671.75
Lincoln.....	St. Catharines.....	23.55	116,524.10	58,761.46
Middlesex.....	London.....	64.27	313,631.26	161,086.39
Northumberland and Durham.....	Trenton.....	12.75	16,201.17	8,125.48
Ontario.....	Oshawa.....	21.70	167,270.48	89,391.90
Oxford.....	Ingersoll.....	4.20	6,815.73	3,411.48
	Woodstock.....	11.05	416,440.60	228,881.08
Perth.....	St. Mary's.....	5.00	10,732.62	5,366.32
	Stratford.....	18.55	41,051.73	20,751.60
Peterborough.....	Peterborough.....	70.00	137,930.32	69,458.85
Simcoe.....	Barrie.....	19.10	34,606.90	18,266.05
Stormont, Dundas and Glengarry.....	Cornwall.....	61.00	149,419.89	75,801.73
Waterloo.....	Galt.....	38.40	97,612.50	50,617.54
	Kitchener.....	58.90	200,780.30	106,301.48
	Waterloo.....	14.80	146,944.90	78,305.58
Welland.....	Niagara Falls.....	17.80	121,469.32	60,932.62
	Welland.....	12.20	43,156.12	21,904.04
Wellington.....	Guelph.....	38.40	64,673.14	32,514.95
Wentworth.....	Hamilton.....	123.80	774,280.23	394,200.08
York.....	Toronto and York....	190.36	1,787,157.22	938,636.80
TOTALS.....		1,214.04	\$6,803,454.62	\$3,670,202.02

INCORPORATED TOWNSHIPS

(Part VI, The Highway Improvement Act, 1957)

Under this part of the Act subsidies accrued to 573 townships, 23 improvement districts and 30 Indian reserves. Total expenditures in 1959 were as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$15,355,904.31	\$14,272,201.87	\$29,628,106.18
Bridges and culverts.....	4,896,598.62	686,323.63	5,582,922.25
Winter control.....		6,578,306.97	6,578,306.97
TOTAL APPROVED EXPENDITURE.....	\$20,252,502.93	\$21,536,832.47	\$41,789,335.40

Work completed during the year at the township level is summarized herewith:

Construction Items:

1. New and rebuilt gravel and stone surfaces.....	2,029.3 miles
Low cost bituminous surfaces.....	413.3 "
Pavements.....	82.6 "
COMPLETED ROAD CONSTRUCTION.....	2,525.2 miles
Graded to standard cross section.....	2,029.3 "
2. Bridges — Concrete, 163; Steel, 44; Timber, 57.	
TOTAL.....	264
Culverts — Concrete, 219; Metal Arch, 430; Timber, 198.	
TOTAL.....	847
Pipe culverts installed.....	5,595

Maintenance Items:

1. Roadside ditching.....	1,872.2 miles
Bituminous surface treatment.....	339.7 "
Dust prevention with oil.....	1,337.3 "
Dust prevention with calcium.....	6,191.5 "
Clay gravel stabilization.....	162.3 "
Resurfacing — Pit-run gravel.....	936,538 cu. yds.
Crushed gravel.....	2,342,326 "
Crushed stone.....	849,070 "
2. Snow control — Mechanical equipment operations.....	46,526 miles
Snow fence protection.....	7,808 "
3. Weed and brush control — By spraying.....	15,649 "
By cutting.....	19,699 "
4. Repaired bridges.....	766
Repaired culverts.....	4,952



Grading of Dev. Road 384 on the Grey-Dufferin boundary, Owen Sound District.

CITIES, TOWNS AND VILLAGES

(Part VII, *The Highway Improvement Act, 1957*)

Aid through subsidies on road and street maintenance and improvement was extended to 30 cities, 8 separated towns, 148 towns and 154 villages. Total expenditures by these urban municipalities were as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$14,155,672.95	\$10,272,841.23	\$24,428,514.18
Bridges and culverts.....	1,566,116.55	334,243.60	1,900,360.15
Winter control.....		6,561,873.52	6,561,873.52
TOTAL APPROVED EXPENDITURE.....	\$15,721,789.50	\$17,168,958.35	\$32,890,747.85

Detailed information on urban municipalities will be found in the following appendices to this report:

Appendix No 5 — Chronological summary of expenditures and subsidies.

Appendix No 10 — Mileages and surface types of roads.

Appendix No. 12 — Breakdown of urban expenditures by districts.

DIRECT EXPENDITURES SECTION

F. C. BROWN, P.Eng., Direct Expenditures Engineer

This section deals with operations of the Branch carried out on other than a subsidy basis, i.e., development roads and roads in unincorporated territory.

DEVELOPMENT ROADS

(Part VIII, *The Highway Improvement Act, 1957*)

During the fiscal year \$7,880,824.96 was expended on 190 projects on 1,144.07 miles of road currently under designation for construction or improvement. Sixty-three projects with a total mileage of 306.4 were completed and the designations were revoked. New designations numbered 55 and 7 former development roads were designated to effect further improvements. A total of 127 projects remained unfinished and were carried forward to the 1960 program.

Of the expenditure total shown above, \$4,757,347.76 was applied to 53 projects on county roads and \$3,123,477.20 on 137 township road projects. The locations, mileages and expenditures on development roads under designation in 1959 are listed in Appendix No. 14.

ROADS IN UNINCORPORATED TERRITORY

(Part IX, *The Highway Improvement Act, 1957*)

This part of the Act provides a means of rendering Departmental assistance toward maintenance and improvement of roads and bridges in those areas of the province, where, due to sparsity of population, incorporation is not feasible. Aid is granted on roads equivalent to the value of statute labour or voluntary work

performed and to the extent of from 80 to 100 per cent of the cost of necessary bridge and culvert expenditures. In special circumstances, road improvement projects are undertaken entirely at the expense of the Department, where it is beyond the ability of the local inhabitants to make any significant contribution. The distribution of aid by districts during the year is shown in the following table:

SUMMARY OF EXPENDITURES IN UNINCORPORATED TOWNSHIPS

MUNICIPAL DISTRICT	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10 — Nipissing.....	\$ 2,429.00	\$ 8,282.31	\$ 10,711.31	77%
11 — Huntsville.....	15,630.07	13,957.22	29,587.29	47
12 — Parry Sound.....	61,446.22	163,817.11	225,263.33	73
13 — Nipissing.....	50,216.31	123,912.12	174,128.43	71
14 — Temiskaming and Cochrane South.....	51,059.76	175,362.77	226,422.53	77
16 — Cochrane North.....	54,037.12	128,962.40	182,999.52	70
17 — Sudbury.....	60,481.76	84,354.17	144,835.93	58
18 — Algoma.....	52,297.49	111,006.24	163,303.73	68
19 — Thunder Bay.....	43,025.35	122,746.29	165,771.64	74
20 — Kenora and Rainy River..	62,268.47	131,844.78	194,113.25	68
TOTALS.....	\$452,891.55	\$1,064,245.41	\$1,517,136.96	70%

A summary of improvements effected through statute labour, voluntary contributions and Departmental aid follows:

ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

The following is a summary of work performed through statute labour, voluntary contributions and Departmental aid:

Construction Items:

Clearing and grubbing	70.4 miles
Grade construction	65.2 "
Gravel and stone surfacing.....	159.3 "
Bridges (10' span and over) — Timber, 36; Steel, 5;	
TOTAL	41
Culverts (under 10' span) — Timber, 187; Metal Arch, 10.	
TOTAL	197
Culvert pipes installed.....	983

Maintenance Items:

1. Roadside ditching.....	377.2 miles
Brush and weed cutting.....	575.5 "
2. Winter control — Snow plowing.....	1,394 "
Snow fence.....	196 "
Pit-run gravel applied.....	381,308 cu. yds.
Crushed gravel and stone applied.....	8,825 "
3. Repaired bridges	170
Repaired culverts	1,193

SIDEWALK CONSTRUCTION, 1959-60*(Under Part X, Section 94, The Highway Improvement Act, 1957)*

Cumberland Township, Police Village of Vars (County Road No. 4).....	\$2,427.45
Lochiel Township, Hamlet of Dalkeith (County Road No. 23).....	598.00
Sandwich West Township (County Roads No. 24 south side (part) and No. 18 north and south sides (part))	4,231.47
Sunnisdale Township, Hamlet of New Lowell (County Road No. 9).....	588.67
Woolwich Township, Hamlet of Floradale (County Road No. 10).....	184.75
Fitzroy Township, Hamlets of Fitzroy and Falette (County Roads No. 20 and No. 23),	762.60
TOTAL	\$8,792.94

PLANNING AND RESEARCH SECTION**C. R. WILMOT, P.Eng., Planning and Research Engineer**

From the findings of the report on "Ontario Roads and Streets" it became obvious that if the needs indicated at the municipal level were to be met, co-ordination of planning by municipalities would be required and standards for various classes of municipal roads must be established. This was initiated at the county level through the appointment of an advisory committee composed of five county engineers and three engineers of the Municipal Roads Branch. The function of this committee is to investigate and make recommendations on matters of mutual concern to the counties and the Department. A significant accomplishment of the committee was the production of geometric design standards for county roads.



Grading of Highway 493 in West Ferris Township, North Bay District.

A survey of municipal bridges throughout the province, initiated in 1958, was completed in 1959. This provides a complete inventory of bridges on municipal roads which can be kept up to date by the districts.

The section also carries out planning and research studies for the subsidies and direct expenditures sections.

PLANS APPROVAL SECTION

B. R. HEAVYSEGE, P.Eng., Plans Approval Engineer

With the establishment of geometric design standards, counties are required to submit plans and profiles of all capital projects. The section examines and issues approval of plans submitted by counties as well as those prepared covering development road projects. Liaison is carried out with the Bridge Division, Planning and Design Branch, in relation to plans for structures.

SUMMARY OF MUNICIPAL ROAD IMPROVEMENTS—1959

The following listing by districts gives a summary of work carried out in 1959 by municipalities and other road organizations receiving aid under The Highway Improvement Act:

SUMMARY OF MUNICIPAL ROAD IMPROVEMENTS—1959

DISTRICT 1—(3 counties, 39 townships, 35 urban municipalities)

Essex—Construction: 42 miles hot mix, 11.5 miles stabilized base, .25 miles of rubber bitumen for surface treatment, 1 steel and 3 concrete bridges, 100' guide rail, 335 pipe culverts.

Maintenance: 18 miles ditching, 50 miles bituminous patching, 94 miles calcium dust laying, 2 miles snow fence, 287 miles weed spraying, 3 bridges and 150 culverts repaired.

Purchases: 1½-ton pick-up truck, 20 acres of land.

Kent—Construction: 23.15 miles of hot mix, 20.5 miles stabilized base, 44,500 lin. ft. underdrainage, 1 temporary bascule bridge under construction at Wallaceburg, 4 concrete bridges, 67 pipe culverts.

Maintenance: 3 miles ditching, 2.5 calcium dust laying, 150 miles weed spraying, 427 miles weed and brush cutting, ½ mile of snow fence, 1 bridge and 6 culverts repaired.

Purchases: 2 ½-ton pick-up trucks, 8.24 acres of land.

Lambton—Construction: 11.70 miles of hot mix, 12.7 miles of new grade using 110,000 cu. yds. of pit-run gravel, 4,400 rods fencing, 415 pipe culverts, 12 concrete culverts and 4 concrete bridges.

Maintenance: 26 miles ditching, 25.5 bituminous surface treatment, 150 miles dust laying, 6 miles snow fence, 275 miles weed spraying, 220 miles weed and brush cutting, 6,600 cu. yds. pit-run gravel, 2,700 cu. yds. crushed stone, 2 bridges and 32 culverts repaired.

Purchases: 1 power grader, 2 trucks, 1 portable drill, 4 traffic counters, 1 dozer-loader, 2 sand and salt spreaders, 1 weed sprayer, 15.0 acres of land.

Townships—Construction: 7.46 miles hot mix, 31.92 miles mulch, 21.5 miles stabilized base, .5 miles cement concrete, 13.5 miles of new grade using 65,356 cu. yds. pit-run, 5,100 cu. yds. crushed gravel, 19,365 tons crushed stone, 70,168 ft. underdrainage, 1,796 lin. ft. guide rail, 885 rods of fencing, 35 bridges, 23 culverts and 402 pipe culverts.

Maintenance: 46.35 miles bituminous surface treatment, 28.7 miles oil and 395.5 miles calcium dust laying, 2,104.5 miles weed spraying, 1,704.5 miles weed and brush cutting, 101,535 cu. yds. pit-run, 104,805 cu. yds. crushed gravel, 70,409 tons crushed stone, 41 bridges and 266 culverts repaired.

Purchases: 1 power grader, 5 trucks, 5 tractors, 1 rotary mower, 1 steam jenny, 1 hi-pressure pump, 1 sand and salt spreader, 1 asphalt distributor, 17.52 acres of land.

DISTRICT 2—(4 counties, 43 townships, 28 urban municipalities)

Elgin—Construction: 9.5 miles of grading, 1 concrete bridge, 65 pipe culverts, 2,500 ft. of guide rail, 9.5 miles of pit-run gravel, 8 miles hot mix concrete paving.

Maintenance: 30 miles bituminous surface treatment, 125 miles weed spraying and 275 miles weeds cut, 4,000 cu. yds. pit-run gravel, 1 bridge repaired, 25 miles calcium dust layer.

Purchases: 10 acres land, 1 grader, 1 pick-up truck, 1 float, 1 chain saw.

Middlesex—Construction: 29.5 miles of grading, 9 concrete and 1 steel bridges, 7 concrete culverts, 225 culvert pipes, 15.4 miles light bituminous paving, 9.8 hot mix asphaltic concrete.

Maintenance: 28.1 bituminous surface treatment, 4.5 oil dust layer, 67 miles calcium dust layer, 330 miles weed spraying, 553 cu. yds. pit-run, 33,626 cu. yds. crushed gravel used for resurfacing.

Purchases: 79.25 acres, 2 tractors, 2 mowers, 3 loaders, 1 grader, 3 ploughs, 1 packer, 1 car.

Norfolk—Construction: 11.3 miles new grade, 1.1 miles hot mix paving, 3 concrete bridges, 24,275 tons crushed stone, 11,926 crushed gravel.

Maintenance: 36 miles bituminous treatment, 200 miles weed spraying, 245 miles weeds cut, 5,084 cu. yds. crushed gravel, 1,800 tons crushed stone, 10 bridges and 11 culverts repaired.

Purchases: 1 angle dozer, 4 sand spreaders, 1 plough, 3 dump trucks, 3 pick-up trucks, 1 pump and water tank.

Oxford—Construction: 9.9 miles light bituminous, 20.8 miles gravel surface, 7 concrete bridges, 3.7 miles concrete paving, 15,760 cu. yds. crushed gravel, 400 tons crushed stone.

Maintenance: 26.5 bituminous surface treatment, 94.8 calcium dust layer, 215 miles of weeds sprayed and cut, 20,509 cu. yds. crushed gravel and 2,733 tons crushed stone, 4 bridges and 21 culverts repaired.

Purchases: 6.5 acres land, 2 dump trucks, 2 sand spreaders.

Townships—Construction: 21.35 miles low-cost bituminous pavement, 10.8 miles asphaltic concrete, 122,489 cu. yds. pit-run, 72,800 cu. yds. crushed gravel, 20,228 cu. yds. crushed stone applied on new grades, 45 culverts and 37 bridges were constructed.

Maintenance: 21.75 miles bituminous treatment, 125 miles oil and 410 miles of calcium dust treatment, 3,479 miles weeds cut and 2,514 miles sprayed, 101,949 cu. yds. pit-run and 341,347 cu. yds. crushed gravel together with 37,268 cu. yds. crushed stone used in resurfacing, 47 bridges and 287 culverts repaired.

Purchases: 14 trucks, 8 graders, 9 snowploughs, 2 sanders, 5 tractors, 6 mowers.

DISTRICT 3—(4 counties, 44 townships, 32 urban municipalities)

Huron—Construction: 15 miles of grading, 8 concrete bridges, 2 concrete culverts, 200 pipe culverts, 9,500 rods of fencing, 225,000 cu. yds. pit-run gravel, 100,000 cu. yds. crushed gravel for road resurfacing, 5 miles light bituminous and 8 miles of asphalt.

Maintenance: 8 miles bituminous surface treatment, 60 miles weed spraying, 70,000 cu. yds. crushed gravel resurfacing, 1 bridge and 2 culverts repaired.

Purchases: 60 acres of land, 5 acres of gravel pit, 3 - 25,000 G.V.W. trucks and 1 ½-ton truck.

Perth—Construction: 7.5 miles of grading, 1 concrete bridge, 29 pipe culverts, 400 lin. ft. of guide rail, 4,350 ft. of underdrainage, 12 miles stabilizing base, 3,960 rods of fencing, 39,000 cu. yds. pit-run gravel, 1,260 cu. yds. crushed gravel and 11.75 miles light bituminous.

Maintenance: 10 miles roadside ditching, 815 miles bituminous surface treatment, 110 miles calcium dust laying, 22,000 cu. yds. pit-run gravel, 7,754 cu. yds. of crushed gravel, 1 bridge and 8 culverts repaired.

Purchases: 2 snowploughs and wings, 2 sanders and 1 tractor loader.

Waterloo—Construction: 16 miles of grading, 2 concrete bridges, 4 concrete culverts, 9 pipe culverts, 1,990 ft. guide rail, 8,000 ft. underdrainage, 119,700 cu. yds. pit-run gravel, 114,000 cu. yds. crushed gravel, 16.5 miles light bituminous.

Maintenance: 7 miles roadside ditching, 6.5 miles bituminous surface treatment, 76 miles calcium dust laying, 210 miles weed spraying, 1 bridge and two culverts repaired.

Purchases: 2 heavy-duty trucks with snowplough and wing, 1 3-ton dump truck and 2 tractors.

Wellington—Construction: 2 concrete bridges, 18 pipe culverts, 10 miles of asphalt, construction of garage at Arthur.

Maintenance: 16 miles roadside ditching, 38 miles bituminous surface treatment, 196 miles calcium dust laying, 99,000 cu. yds. crushed gravel resurfacing, 3 bridges, 14 culverts repaired.

Purchases: 3 trucks with sanding units, 3 motor graders, garage building in Harriston.

Townships—Construction: 36 miles clearing and grubbing, 147 miles grading, 366 pipe culverts, 100 metal culverts, 20 concrete culverts, 25 concrete bridges, 262 sq. yds. sodding, 3,478 lin. ft. guide rail, 14,974 lin. ft. underdrainage, 5.5 miles stabilizing base, 2,800 rods of fencing, 103,158 cu. yds. pit-run gravel, 78,677 cu. yds. crushed gravel, 10,467 cu. yds. crushed stone, 10.35 miles light bituminous, 2 miles asphalt.

Maintenance: 115 miles roadside ditching, 11,000 ft. offtake ditching, 8.5 miles bituminous surface treatment, 52.5 miles oil dust laying, 875 miles calcium dust laying, 205 miles snow fence, 2,800 miles weed spraying, 2,038 miles weed cutting, resurfacing 2,447 cu. yds. pit-run gravel, 435,200 cu. yds. crushed gravel, 1,693 cu. yds. crushed stone, 33 bridges repaired and 287 culverts repaired.

Purchases: 99.87 acres of land, and 7 acres of gravel pit, 8 motor graders with snowplough and wing, 4 heavy-duty dump trucks, 2 $\frac{1}{2}$ -ton pick-ups, 1 power saw, 2 weed sprayers, 1 tractor mower, and 1 snowplough and wing.

DISTRICT 4—(5 counties, 39 townships, 2 Indian reserves, 25 urban municipalities)

Brant—Construction: 1 mile light bituminous surface, 2 steel and 2 concrete bridges, 7 miles reconstruction.

Maintenance: 14.4 miles surface treatment, 16.8 miles dust layer, 125 miles snowploughing, 2 bridges repaired, 2,373 cu. yds. crushed stone applied.

Purchases: 2 dump trucks.

Haldimand—Construction: 17.44 miles surface treatment, 26 pipe culverts, 3 concrete culverts, 4.5 miles reconstruction.

Maintenance: 2.0 miles surface treatment, 10.0 miles dust layer, 165 miles snowploughing, 1 bridge repaired, 7,135 tons crushed stone applied.

Purchases: 2 dump trucks, 1 pick-up truck, 1 grader, 1 tandem roller.

Lincoln—Construction: 4.0 miles light bituminous surface, 3.5 miles hot mix asphalt, 3 bridges, 50 pipe culverts, 8 miles reconstruction, 60,000 tons crushed stone.

Maintenance: 32 miles surface treatment, 3 miles dust laying, 195 miles snowploughing, 31,000 tons crushed stone applied.

Purchases: 2 ploughs, 3 sanders, compressor, pump, jack loader, roller, two $\frac{1}{2}$ -ton trucks, three 5-ton dump trucks.

Welland—Construction: 7.7 miles light bituminous surface, 5.6 miles hot mix asphalt, 1 bridge, 222 pipe culverts, 79,000 tons crushed stone.

Maintenance: 4.5 miles dust layer, 166 miles snowploughing, 3,000 tons crushed stone.

Purchases: gradall, 2 dump trucks, $\frac{1}{2}$ -ton pick-up truck, panel truck, tractor and mower, 2 sanders, 1 automobile.

Wentworth—Construction: 27 miles light bituminous surfacing, 1 concrete bridge, 16 pipe culverts, 4 miles reconstruction.

Maintenance: 40 miles surface treatment, 14 miles dust layer, 184 miles snowploughing, 5,300 tons crushed stone applied.

Purchases: 3 dump trucks with ploughs and wings, 2 mowers, 1 steam jenny, 1 sand spreader.

Townships—Construction: 55.75 miles light bituminous surfacing, 3.75 miles hot mix asphalt, 13 bridges, 659 pipe culverts, 31 concrete culverts, 40.45 miles reconstruction, 33,151 cu. yds. pit-run gravel, 20,560 cu. yds. crushed gravel, 230,303 tons crushed stone.

Maintenance: 104.07 miles surface treatment, 1,470 miles dust layer, 3,762 miles snowploughing, 252,900 tons crushed stone, 66,750 cu. yds. crushed stone, 29 bridges repaired, 329 culverts repaired.

Purchases: 16 dump trucks, 4 pick-up trucks, 1 automobile, 3 sand spreaders, 4 tractors and loaders, 3 tractors and mowers, 1 mower, 8 graders, 1 sprayer, 6 snowploughs and wings, 2 steam jennys, 1 shovel dipper, 4.0 acres of land.

DISTRICT 5—(3 counties, 38 townships, 2 Indian reserves, 29 urban municipalities)

Bruce—Construction: 3.2 miles concrete paving, 10 miles new grade, 6 concrete culverts, 10 miles pit gravel and 10 miles crushed gravel.

Maintenance: 24.2 miles bituminous treatment, 146 miles calcium dust layer, 287 miles weed cut, 40,656 cu. yds. crushed gravel, 6 bridges repaired.

Purchases: 80 acres, 3 tractor mowers, 4 trucks, 1 sander, 3 loaders, 2 graders, 1 pavement breaker, 1 chain saw.

Dufferin—Construction: 5.6 miles new grade, 1 steel and 1 concrete bridge, 5.6 miles crushed gravel, 42 culvert pipes.

Maintenance: 1.7 miles bituminous treatment, 45 miles calcium dust layer, 160 miles weeds sprayed, 170 miles weeds cut, 34,100 cu. yds. crushed gravel, 6 culverts repaired.

Purchases: 25 acres, 1 grader, 4-wheel-drive loader, 1 sander, pavement breaker.

Grey—Construction: 6.3 miles new grade, 4 concrete culverts, 2,100 ft. guide rail, 70,000 cu. yds. pit-run, 4,000 cu. yds. crushed gravel.

Maintenance: 13.3 miles bituminous treatment, 33 miles oil dust layer, 215 calcium dust layer, 302 miles weeds sprayed, 603 miles weeds cut, 7,822 cu. yds. pit-run and 63,342 cu. yds. crushed gravel, 2 bridges and 25 culverts repaired.

Purchases: 57 acres, 1 Adams motor grader.

Townships—Construction: 1.3 miles bituminous surfacing, 2.2 miles asphaltic concrete, 110.8 miles new grade using 118,272 cu. yds. pit-run, 81,481 cu. yds. crushed gravel and 3,227 cu. yds. crushed stone, 16 bridges and 42 culverts were constructed.

Maintenance: 5.5 miles bituminous treatment, 54.7 miles ditching, 396 miles calcium dust laying, 3,677 miles snow clearing, 901 miles weed sprayed and 1,026 miles weeds cut, 11,027 cu. yds. pit-run and 294,017 cu. yds. crushed gravel used in resurfacing, 43 bridges, 237 culverts repaired.

Purchases: 5 graders, 4 snowploughs, 1 tank sprayer, 3 trucks, 1 mower, 40 acres of land.

DISTRICT 6—(4 counties, 31 townships, 1 Indian reserve, 33 urban municipalities)

Halton—Construction: 9.5 miles of grading, 45 pipe culverts, 2 concrete bridges, 500 lin. ft. of guard rail, 60 rods of fencing, 31,300 cu. yds. pit gravel on 5.7 miles, 59,000 cu. yds. crushed gravel on 30 miles, 13,700 tons crushed stone on 4 miles, 7.5 miles light bituminous surface, 9.0 miles asphaltic concrete pavement.

Maintenance: 2.0 miles of roadside ditching, 12.25 miles of bituminous surface treatment, 70 miles of calcium dust layer, 12,000 cu. yds. crushed gravel, 8,950 tons of crushed stone, 2 bridges repaired.

Purchases: 1 ½-ton truck, 2 5-ton trucks, 1 sanding body, 1 tractor and mower, 1 steam heater.

Peel—Construction: 51.45 acres of cleaning and grubbing, 21.6 miles of grading, 381 pipe culverts, 14 concrete bridges, 28,585 lin. ft. of guide rail, 468 lin. ft. of underdrain, 2,853 rods of fencing, 209,800 cu. yds. of pit-run gravel on 18 miles of road, 59,000 cu. yds. of crushed gravel on 18.0 miles, 1,800 tons crushed stone, 6.3 miles of asphaltic concrete pavement.

Maintenance: 2.7 miles of roadside ditching, 12.0 miles of bituminous surface treatment, 22.5 miles of oil dust layer, 34 miles of calcium dust layer, 17,000 tons of crushed gravel, 1 bridge repaired.

Purchases: 1 motor grader, 1 pressure pump, 1 blue print machine.

Simcoe County and Barrie Suburban Road Commission—Construction: 8.5 miles of clearing and grubbing, 11.85 miles of grading, 71 pipe culverts, 2 concrete bridges, 186 lin. ft. of guide rail, 2,864 rods of fencing, 112,850 cu. yds. of pit-run gravel on 9.85 miles, 25,393 cu. yds. of crushed gravel on 9.85 miles, 5.2 miles of asphaltic concrete pavement.

Maintenance: 10.5 miles of roadside ditching, 5.8 miles bituminous surface treatment, 54.7 miles of oil dust layer, 136 miles of calcium dust layer, 12,675 cu. yds. pit-run gravel, 24,698 cu. yds. of crushed gravel.

Purchases: 1 tractor loader, 1 tractor mower, loader, a motor grader, 1 snowplough, 1 chain saw, 40.3 acres of land.

York—Construction: 32.3 acres of clearing and grubbing, 17.5 miles of grading, 45 pipe culverts, 2 concrete bridges, 126,526 sq. yds. of sodding, 22,510 lin. ft. of guide rail, 3,760 lin. ft. of underdrain, 2,206 rods of fencing, 208,000 cu. yds. of pit-run gravel on 17.5 miles, 60,800 cu. yds. crushed gravel on 17.5 miles, 15.0 miles of asphaltic concrete pavement.

Maintenance: 22 miles of roadside ditching, 28 miles of bituminous surface treatment, 26 miles of calcium dust layer, 2,038 cu. yds. of pit-run gravel, 3,265 tons of crushed gravel, 605 tons of crushed stone, 42 culverts repaired.

Purchases: 4 mowers, 8 slush scrapers, 1 traffic counter, 1 calculator, 36.414 acres of land.

Townships—Construction: 44.1 acres of clearing and grubbing, 231.6 miles graded, 526 pipe culverts, 5 wooden bridges, 10 steel bridges, 39 concrete bridges, 28,649 sq. yds. of sodding, 12,058 lin. ft. of guide rail, 6,572 rods of fencing, 222,042 cu. yds. of pit-run gravel on 65.93 miles, 93,696 cu. yds. of crushed gravel on 55.6 miles, 70,198 tons of crushed stone on 9.5 miles, 46.0 miles of light bituminous surface, 29.01 miles of asphaltic concrete pavement.

Maintenance: 154.1 miles of roadside ditching, 8,600 lin. ft. of off-take ditches, 49.3 miles of

bituminous surface treatment, 275.1 miles of oil dust layer, 724 miles of calcium dust layer, 32,605 cu. yds. of pit-run gravel, 166,650 cu. yds. of crushed gravel, 189,294 tons of crushed stone, 35 bridges repaired.

Purchases: 12 motor graders, 1 1½-ton dump truck, 2 3-ton dump trucks, 1 4-ton dump truck, 2 5-ton dump trucks, 7 ½-ton pick-up trucks, 3 loaders, 5 snowploughs, 2 box sanders, 2 Swenson spreaders, 1 steam jenny, 1 electric welder, 1 1-ton pick-up truck, 1 ¾-ton pick-up truck, 46.03 acres of land, gravel pits — 35.8 acres.

DISTRICT 7—(3 counties, 37 townships, 17 urban municipalities)

Northumberland and Durham—Construction: 18 miles of new grade, 12.6 miles light bituminous, 8 miles stabilized base, 1,500 ft. guide rail, 85,000 cu. yds. pit-run, 35,000 cu. yds. crushed gravel, 2 concrete culverts, 5 concrete bridges.

Maintenance: 8,000 cu. yds. crushed gravel, 23 miles bituminous treatment, 89 miles oil and 40 miles calcium dust layer, 305 miles weeds sprayed and 317 miles weeds cut, 7,500 cu. yds. pit-run gravel.

Purchases: 3 trucks, 2 tractors, 1 spreader, 1 mower and post hole digger, 2 kettles (tar).

Peterborough—Construction: 2.5 miles light bituminous, 42,386 cu. yds. pit-run gravel, 1,000 ft. guide rail, 3 metal and 2 concrete culverts, 1,500 cu. yds. crushed gravel.

Maintenance: 14.5 miles bituminous treatment, 26,983 cu. yds. crushed and 5,426 cu. yds. pit-run gravel, 85 miles weeds sprayed and 212 miles weeds cut, 53 miles oil and 61 miles calcium dust layer, 21 bridges and 30 culverts repaired.

Purchases: 2 trucks, 1 plough, 1 car, 2 traffic counters.

Prince Edward—Construction: 5.1 miles new grade, 4,000 cu. yds. crushed and 15,700 cu. yds. pit-run gravel applied to 32 miles of road, 40 culvert pipes.

Maintenance: 9.6 miles bituminous surface treatment, 41.7 miles oil and 34 miles calcium dust layer, 159 miles weeds sprayed, 28 cu. yds. pit-run gravel, 1 bridge and 6 culverts repaired.

Purchases: 3 acres, 3 trucks, 2 spreaders, 1 sprayer, 1 tractor.

Townships—Construction: 42.2 miles light bituminous pavement, 3.7 asphaltic concrete, 249.5 miles new grade, 112,579 cu. yds. pit-run and 72,441 cu. yds. crushed gravel, 9,237 cu. yds. crushed stone, 7 bridges and 73 culverts were built.

Maintenance: 6 miles bituminous surface treatment, 50.7 miles roadside ditching, 77.8 miles oil and 306 miles calcium dust laying, 871 miles weeds sprayed and 1,262 cut, 34,323 cu. yds. pit-run, 69,014 cu. yds. crushed gravel, 4,500 cu. yds. crushed stone used in resurfacing, 36 bridges and 181 culverts were repaired.

Purchases: 7 trucks, 5 snowploughs, 4 front end loaders, 1 tractor, 1 sander.

DISTRICT 8—(4 counties, 42 townships, 1 Indian reserve, 18 urban municipalities)

Frontenac—Construction: 5.2 miles light bituminous pavement, 20 acres cleared and grubbed, 6.5 miles new grade, 10,000 ft. of guide rail, 4,000 rods of fencing, 26,000 cu. yds. crushed stone, 39 pipe culverts, 7 other culverts and 1 bridge were constructed.

Maintenance: 20 miles ditching, 3.7 miles bituminous surface treatment, 11 miles oil and 37 miles calcium dust laying, 14 miles weeds sprayed and 11 miles cut, 8,290 cu. yds. crushed stone resurfacing, 3 bridges and 4 culverts repaired.

Purchases: 4 electric pumps and 3 snowploughs and 1 sander.

Hastings—Construction: 3.0 miles light bituminous pavement, 1.75 miles new grade, 590 cu. yds. pit-run and 300 cu. yds. crushed gravel and 205 tons crushed stone, 2 bridges and 1 culvert constructed.

Maintenance: 14.0 miles bituminous surface treatment, 3.4 miles oil and 88 miles calcium dust laying, 47 miles weeds sprayed and 244 miles cut, 1,471 cu. yds. pit-run, 15,482 cu. yds. crushed gravel and 3,675 cu. yds. crushed stone, 18 bridges and 19 culverts repaired.

Purchases: 1 new-cat. grader, 13 acres land.

Lennox and Addington—Construction: 11 acres cleared and grubbed, 8 miles new grade, 1,500 ft. underdrain, 60,000 cu. yds. pit-run and 10,000 cu. yds. crushed gravel.

Maintenance: 15.0 miles bituminous surface treatment, 11 miles roadside ditching, 20 miles oil dust laying, 160 miles weeds sprayed, 175 miles snowploughed, 12,000 cu. yds. crushed stone used resurfacing, 1 bridge repaired.

Purchases: 25 acres land, 1 used FWD truck, 1 used backhoe, ½-ton truck and compactor.

Leeds and Grenville—Construction: 8.5 miles light bituminous pavement, 4.6 miles new grade, 4,080 ft. guide rail, 4,679 cu. yds. pit-run, 5,816 cu. yds. crushed gravel, 14 culvert pipes, 1 concrete culvert, and 12 bridges constructed.

Maintenance: 21.4 miles bituminous surface treatment, 110 miles calcium dust laying, 249 miles snowploughing, 464 miles weeds sprayed, 6,942 cu. yds. crushed gravel and 6,507 cu. yds. crushed stone, 3 bridges and 36 culverts were repaired.

Purchases: 39.7 acres land, new cat power grader.

Townships—Construction: 3.2 miles asphaltic concrete pavement, 71 miles new grade, 193 culvert pipes installed, 12 acres cleared, 17,368 cu. yds. pit-run, 7,699 cu. yds. crushed, 2,222 cu. yds. crushed stone.

Maintenance: 9.9 miles bituminous surface treatment, 120.5 miles ditching, 51 miles oil, and 151 miles calcium dust laying, 490 miles weeds sprayed and 953 miles cut, 68,661 cu. yds. pit-run and 63,081 cu. yds. crushed gravel also 56,936 cu. yds. crushed stone, 71 bridges and 522 culverts repaired.

Purchases: 20 acres land, 6 trucks, 4 graders, 4 snowploughs, 1 sprayer and 1 loader.

DISTRICT 9—(4 county units, 47 townships and 23 urban municipalities)

Carleton—Construction: 10.85 miles of hot mix, 0.7 miles retread, 13.4 miles of stabilized base, 16.2 miles of new grade using 142,992 cu. yds. of pit-run gravel, 38,673 cu. yds. crushed gravel and 2,218 cu. yds. crushed stone, 4,420 lin. ft. of guide rail, 8,400 rods fencing, 640 ft. of underdrainage, 65 pipe culverts, 1 metal arch culvert, 2 steel bridges and 2 concrete bridges.

Maintenance: 18.1 miles bituminous surface treatment, 53 miles of calcium dust laying, 182 miles weeds sprayed, 5.5 miles roadside ditching, 79 miles weed and brush cutting, 7,714 cu. yds. pit-run gravel, 5,023 cu. yds. crushed gravel, 1,416 tons crushed stone, 1,295 tons of cold mix patching material, 3 bridges and 50 culverts repaired.

Purchases: 2 graders, 2 dump trucks, 2 pick-up trucks, 6.78 acres land.

Lanark—Construction: .10 miles of hot mix, 5.5 miles of stabilized base, 5.5 miles of new grading using 92,620 cu. yds. pit-run gravel, 4,800 cu. yds. crushed gravel, 3,700 lin. ft. guide rail, 3,100 rods fencing, 44 pipe culverts, 3 metal arch culverts.

Maintenance: 13.16 miles of bituminous surface treatment, 120 miles of calcium dust laying, 306 miles of weeds sprayed; 9 miles of roadside ditching; 2,000 lin. ft. of off-take ditching, 120 miles of weed and brush cutting, 15,500 cu. yds. pit-run gravel placed and 8 bridges repaired.

Purchases: 2 dump trucks, 1 ½-ton pick-up truck.

Prescott and Russell—Construction: 11.5 miles of mulch, 15.5 miles of mixed macadam, 19 miles of new grading using 15,000 cu. yds. of pit-run gravel, 60,000 cu. yds. of crushed gravel, 5,000 cu. yds. crushed stone, 2 metal arch culverts, 5 miles of stabilized base.

Maintenance: 18 miles of bituminous surface treatment, 5 miles of dust laying treatment, 10 miles of calcium dust laying treatment, 5 miles of roadside ditching, 310 miles of weeds sprayed, 200 miles of weed and brush cutting, 50 cu. yds. of crushed gravel, 10 cu. yds. crushed stone, 5 bridges and 2 culverts repaired.

Purchases: 1 heater, 1 car.

Stormont, Dundas and Glengarry—Construction: 16.0 miles of bituminous resurfacing, 17.0 miles of mulch, 15.0 miles of new grading using 18,907 cu. yds. of pit-run gravel, 23,721 cu. yds. crushed gravel, 317 cu. yds. crushed stone, 3 concrete culverts, 2 steel bridges, 1 concrete bridge.

Maintenance: 23 miles of bituminous surface treatment, 18 miles of calcium dust laying, 73 miles of weeds sprayed, 451 miles of weed and brush cutting, 1,699 cu. yds. of pit-run gravel applied, 10,199 cu. yds. of crushed gravel and 633 cu. yds. of crushed stone.

Purchases: 42.47 acres of land.

Townships—Construction: 1.6 miles of retread, 124.45 miles of new grade using 136,259 cu. yds. of pit-run gravel, 107,123 cu. yds. of crushed gravel, 25,827 cu. yds. of crushed stone, 447 pipe culverts, 5 wood culverts, 30 metal arch culverts, 69 concrete culverts, 3 wood bridges, 8 steel bridges, 7 concrete bridges, 280 lin. ft. of guide rail, 8 miles of stabilized base, 11,706 rods of fencing.

Maintenance: 5 miles of bituminous surface treatment, 20 miles calcium gravel stabilization, 5 miles salt gravel stabilization, 664.25 miles calcium dust laying treatment, 17 miles oil dust laying, 54.37 miles of roadside ditching, 11,268 lin. ft. of off-take ditching, 1,336.50 miles of weeds sprayed, 1,031.25 miles of weed and brush cutting, 59,632 cu. yds. of pit-run gravel, 153,990 cu. yds. of crushed gravel, 12,979 cu. yds. of crushed stone applied, 85 bridges and 192 culverts repaired.

Purchases: 5 new dump trucks, 2 used dump trucks, 1 ½-ton pick-up truck, 1 float, 2 front end loaders, 11 graders, 1 sprayer, 1 boiler, 1 tractor pump, 1 used bulldozer, 76.45 acres of land.

DISTRICT 10—(1 county, 40 townships, 13 urban municipalities, 4 statute labour boards, 1 unorganized unit)

Renfrew—Construction: 2.5 miles of new grade and base using 14,000 cu. yds. of pit-run gravel and 4,300 cu. yds. of crushed gravel. Practically completed one steel and concrete bridge.

Maintenance: Bituminous surface treatment on 9.5 miles, two bridges repaired and 18 culverts replaced, 150 miles of weed cutting and 85 miles of weed spraying, 40 miles of snow fence erected, 224 miles of snow clearing, 55 miles of calcium dust laying.

Purchases: 1 tractor loader, 1 5-ton truck with snowplough and wing, and 3.0 acres of land.

Townships—Construction: 44 miles of new grade using 44,551 cu. yds. of pit-run gravel and 2,101 tons crushed stone and 20,312 cu. yds. of crushed gravel, 60 lin. ft. of guide rail, 23 timber bridges, 22 timber culverts, 176 steel pipe culverts, 4 metal arch culverts and 2 concrete culverts, 6,031 rods of fencing.

Maintenance: Roadside ditching 94 miles, off-take ditching 525 miles, calcium dust layer 74 miles and oil dustlaying 28½ miles, bituminous surface treatment 35 miles, snow fence erected 360¼ miles, snow clearing 2,651¾ miles, weed spraying 186 miles, weed cutting 440¾ miles, pit-run gravel applied 78,695 cu. yds. crushed gravel applied 26,383 tons, crushed stone 3,094 tons, bridges repaired 51, culverts repaired 230.

Purchases: 5 trucks, 4 graders, 2 snowploughs, 1 wing, 1 snowplough for grader, 49 acres of land.

Statute Labour and Unorganized Units—Construction: Built 3 timber bridges, 1 wooden culvert, and installed 16 (C.I.P.) culverts.

Maintenance: Dragged 43 miles of road, applied 12 cu. yds. mulch, applied 60 cu. yds. crushed gravel and 1,450 cu. yds. pit-run gravel, repaired 4 bridges.

DISTRICT 11—(2 counties, 1 provisional county, 1 district, 49 townships, 1 improvement district, 2 Indian reserves, 4 statute labour boards, 19 urban municipalities, 4 unorganized units)

Ontario—Construction: 19 miles light bituminous paving and 1 mile hot mix pavement, 94,000 cu. yds. pit-run and 13,000 cu. yds. crushed gravel, 2,000 ft. guide rail, 7 miles stabilized base built, 2 wood and 7 concrete bridges were erected.

Maintenance: 12.2 miles bituminous surface treatment, 10,500 cu. yds. pit-run and 32,000 cu. yds. crushed gravel, 4,000 cu. yds. crushed stone used to resurface, 33 miles oil and 71 miles calcium dust layer, 225 miles weeds sprayed, 12 bridges and 54 culverts repaired.

Purchases: 50 acres land, 2 trucks, 1 tractor, 1 sand spreader.

Victoria—Construction: 3 miles light bituminous, 14 miles hot mix concrete, 8 miles new gravel surfaces, 1 concrete culvert.

Maintenance: 11.3 miles bituminous surface treatment, 349 cu. yds. pit-run, 33,000 cu. yds. crushed gravel, 3,000 cu. yds. crushed stone used to resurface, 10 bridges and 30 culverts repaired.

Purchases: 8.5 acres of land, 3 sand spreaders.

Townships—Construction: 27 miles light bituminous paving, 8 miles hot mix concrete, 9 miles stabilized base and 84 miles new grade using 97,505 cu. yds. pit-run and 59,669 crushed gravel, also 7,850 cu. yds. crushed stone, 30 wood, 46 metal arch and 3 concrete culverts were constructed, also 1 wood, 6 steel and 2 concrete bridges.

Maintenance: 82,161 cu. yds. pit-run and 117,991 cu. yds. crushed gravel, 5,150 tons of crushed stone used in resurfacing, 210 miles roadside ditching, 3,469 miles snowploughed, 1,002 miles weeds sprayed, 1,924 miles weeds cut, 68 bridges and 555 culverts repaired.

Purchases: 9.3 acres of land, 24 acres of gravel pit, 9 trucks, 4 ploughs, 4 tractors, 3 graders, 1 spreader.

DISTRICT 12—(18 townships, 4 Indian reserves, 9 urban municipalities, 18 statute labour boards, 6 unorganized units)

Organized Townships—Construction: 9.0 acres cleared, 9.43 miles reconstructed (pit-run gravel 9,998 cu. yds.), 121 pipe culverts and 3 wood culverts installed, 5 wooden bridges and 2 concrete bridges constructed, 500 feet of underdrain installed, 0.5 miles hot mix asphalt laid.

Maintenance: 94.26 miles roadside ditching, 4,200 ft. off-take ditching, 1.0 mile bituminous surface treatment, 96.5 miles calcium chloride dust layer applied, 51.35 miles snow fence erected, 879.0 miles snowploughed, 42.0 miles weed spraying, 195.0 miles weed cutting, 51,344 cu. yds. pit-run and 21,703 cu. yds. crushed gravel applied, 32 bridges and 307 culverts repaired.

Purchases: 3 dump trucks and 1 power grader.

Statute Labour and Unorganized Units—Construction: 22.5 miles reconstructed, 19,100 cu. yds. pit-run and 900 cu. yds. crushed gravel on new grades, 2 wooden and 1 Bailey bridge constructed and 410 pipe culverts installed.

Maintenance: 43 miles of roadside ditching, 6,600 ft. of off-take ditching, 48 miles of weed and brush cutting, 9 miles of snow fence erected, 422 miles snowploughed, 70,100 cu. yds. gravel applied, 10 bridges and 228 culverts repaired.

DISTRICT 13—(18 organized townships, 7 urban municipalities, 17 statute labour boards, 25 unorganized units)

Organized Townships—Construction: 16.5 miles of clearing and grubbing, 29.3 miles of reshaping, 33,224 cu. yds. of pit-run gravel and 1,000 cu. yds. of crushed gravel on 1.5 miles of reconstructed grade, 13 timber culverts, 1 metal arch culvert, 223 other metal culverts and 450 lin. ft. of guide rail.

Maintenance: 64.15 miles of roadside ditching, 4,700 lin. ft. of off-take ditching, 10 miles of oil dust layer, 55.5 miles of calcium dust layer, 92.1 miles of snow fence erected, 856.2 miles of road snowploughed, 36 miles of weed spraying, 234.5 miles of weed cutting, 43,146 cu. yds. of pit-run gravel, 13,563 cu. yds. of crushed gravel and 2,050 cu. yds. of crushed stone applied, 37 bridges and 130 culverts repaired.

Purchases: 1 oil furnace, 2 trucks, 2 "V" snowploughs, 2 snow wings and 1 one-way snowplough.

Statute Labour and Unorganized Units—Construction: Grade reshaping 5 miles, 83 pipe culverts, 1 timber culvert, 7 metal arch culverts were installed, 5 wood bridges, 400 lin. ft. of guide rail, 34.5 miles roadside ditching, 5,035 lin. ft. of off-take ditching, 137.4 miles of weed and brush cutting, 14.5 miles of snow fence erected, 158.93 miles of road snowploughed, 74,803 cu. yds. of pit-run gravel, 973 cu. yds. of stone applied, 32 bridges and 193 culverts repaired.

DISTRICT 14—(23 townships, 3 improvement districts, 9 urban municipalities, 26 statute labour boards, 59 unorganized units)

Organized Townships—Construction: 8 miles light bituminous, 6 miles hot mix, 16 miles new grade, 9,600 cu. yds. of pit-run gravel, 4,980 cu. yds. of crushed gravel, 1 timber, 1 steel bridge, 73 C.I.P. culverts.

Maintenance: 118 miles brush cutting, 160 miles of weed spraying, 44,200 cu. yds. pit-run, 6,600 cu. yds. crushed gravel, 7,800 tons crushed gravel, 3,500 cu. yds. crushed stone, 170 miles snow fence, 907 miles of snowploughing, 88 miles of ditching, 9.0 miles of bituminous surface treatment, 15 miles of dust layer, 8 miles of calcium chloride, 40 bridges, 233 culverts.

Purchases: 1 spray pump, 1 cement mixer, 1 grader, 1 truck, 1 excavator. Land purchase: 1.1 acres.

Statute Labour and Unorganized Units—Construction: 14.5 miles grading, 33 culverts, 6 timber, 3 steel bridges, 4,500 cu. yds. pit-run gravel, 3,000 tons of surface treatment.

Maintenance: 40 miles of ditching, 62 brush cutting, 79 snow fence, 251 miles snowploughing, 50,400 cu. yds. pit-run gravel, 5,000 cu. yds. of crushed gravel, 45 bridges, 174 culverts.

DISTRICT 16—

Townships—Construction: 2.1 miles new grade using 4,589 cu. yds. pit-run, 5,500 cu. yds. crushed gravel, 2 timber bridges, 14 culverts were constructed.

Maintenance: 12.3 miles of ditching, 19 miles calcium dust laying, 26.5 miles weed cutting, 27,213 cu. yds. pit-run and 1,240 cu. yds. crushed gravel, 9 bridges and 45 culverts were repaired, 277 miles of snowploughing.

Purchases: 1 truck with snowplough attachments, 1 culvert steamer, 1 rebuilt motor for grader.

Statute Labour and Unorganized Units—Construction: 28 acres of new road built, 30 culvert pipes installed, 6 timber bridges, 8 culverts were built.

Maintenance: 25.2 miles of ditching, 87 miles of weeds spraying and cutting, 39,872 cu. yds. pit-run gravel, 7 timber bridges and 28 pipe and timber culverts were repaired, 166 miles of snowploughing.

DISTRICT 17—25 organized townships, 11 urban municipalities, 7 Indian reserves, 1 improvement district, 20 statute labour boards)

Organized Townships—Construction: 20 miles of clearing and grubbing, 99.25 miles of grade, 122 culverts installed, 5 wood, 2 metal arches, 1 concrete. Bridges built — 8 wood, 1 steel and 1 concrete, 1,380 lin. ft. of guide rail, 80 rods of fencing, 87,680 cu. yds. of pit-run gravel, 35,420 cu. yds. of crushed gravel, 8,400 cu. yds. of crushed slag, 11.33 miles of asphalt paving.

Maintenance: 172 miles of ditching, 12,500 ft. of off-take ditching, 5 miles of surface treating, 29 miles of dust laying oil, 340 miles dust laying calcium, 21 miles of snow fence, 792 miles of snow clearing, 182 miles of weed spraying, 77 miles of weed cutting, 21,970 cu. yds. of pit-run gravel, 9,931 cu. yds. of crushed gravel, 2,534 cu. yds. of sand cushion, 30 bridges repaired, 181 culverts repaired.

Purchases: 3 new motor graders, 3 used motor graders, 2 5-ton trucks, 1 ½-ton pick-up, 1 diesel front end and backhoe loader, 1 used 1957 tractor, one self-propelled motor scythe.

Statute Labour and Unorganized Units—Construction: 129 pipe culverts installed, 200 lin. ft. of guide rail, 6,500 lin. ft. of underdrains.

Maintenance: 41 miles of roadside ditching, 2,548 lin. ft. of off-take ditching, 45 miles of weed and brush cutting, 16 miles of snow fence, 189 miles of snowploughing, 33,884 cu. yds. of pit-run gravel, 490 cu. yds. of crushed gravel, 9 bridges repaired, 101 culverts repaired.

DISTRICT 18—(18 organized townships, 2 improvement districts, 7 urban municipalities, 1 Indian reserve, 19 statute labour boards, 53 unorganized units)

Organized Townships—Construction: 10.25 miles new grade using 26,475 cu. yds. pit-run gravel, 5,696 cu. yds. crushed gravel, 2 wooden bridges, 15 wooden culverts, 2 pipe arch culverts and 161 pipe culverts were built. 1,100 lin. ft. of guard rail and 1,440 rods of fence were erected, 3½ miles hot mix asphalt and ¼ mile of mixed in place mulch surface were laid.

Maintenance: 103 miles roadside ditching, 1,240 lin. ft. off-take ditching, 7 miles sulphite liquor and 89 miles calcium chloride dust laying, 32 miles of snow fence erected, 655 miles snowploughed, 46 miles weed spraying, 88 miles brush and weed cutting, 44,503 cu. yds. pit-run gravel and 22,458 cu. yds. crushed gravel applied, 27 bridges and 281 culverts repaired.

Purchases: 2 power graders, 1 5-ton truck, 2 ½-ton trucks, 1 wheel tractor with backhoe and mower attachments, 1 snowplough (oneway), 1 snow blower.

Statute Labour and Unorganized Units—Construction: 32 acres right of way cleared to construct 5 miles of new grade, 15,157 cu. yds. pit-run gravel, 61 pipe culverts, 3 wood culverts, 2 wooden bridges and 1 steel beam bridge.

Maintenance: 22 miles roadside ditching, 1,200 lin. ft. off-take ditching, 37 miles weeds and brush cut, 1¾ miles snow fence erected, 165 miles snowploughing, 28,262 cu. yds. pit-run gravel, 14 bridges and 48 culverts repaired.

DISTRICT 19—(11 townships, 3 urban municipalities, 8 improvement districts, 22 statute labour boards, 7 unorganized units, 2 Indian reserves)

Organized Townships and Improvement Districts—Construction: 3.35 miles asphaltic concrete, 6.65 miles mulch, 13½ miles new grade using 21,617 cu. yds. pit-run gravel, 3,063 cu. yds. crushed gravel, 8 wooden bridges, 66 wooden culverts, 139 metal culverts.

Maintenance: 35 miles calcium dust laying, 16½ miles oil, 105½ miles weed spraying, 26 miles roadside ditching, 53,458 cu. yds. pit-run gravel, 4,604 cu. yds. crushed gravel, 31 bridges repaired and 160 culverts.

Purchases: 4 graders and 1 truck.

Statute Labour and Unorganized Units—Construction: 4 miles new grade was built using 37,250 cu. yds. pit-run gravel, 112 culvert pipes installed, 141 timber culverts, 15 timber bridges were erected.

Maintenance: 73 miles roadside ditching, 55 miles of weeds and brush cut, 404 miles of snowploughing, 39,500 cu. yds. of pit-run gravel used, resurfacing, 23 bridges and 187 culverts repaired.

DISTRICT 20—118 townships, 6 urban municipalities, 24 statute labour boards, 39 unorganized units)

Organized Townships—Construction: Clearing and grubbing 5.0 acres, grade 6.0 miles, C.I.P. culverts 8, wood culverts 40 installed, stabilized base 2.0 miles, 1,860 cu. yds. of pit gravel on 6.5 miles of grade and 181 cu. yds. of crushed gravel on 0.25 miles of grade.

Maintenance: Roadside ditching 20.7 miles, off-take ditching 6,250 lin. ft., oil dust layer on 5.0 miles of road, calcium chloride on 9.2 miles of road, snow fence erected 98.5 miles, weed cutting 344.5 miles, resurfacing pit-run gravel 39,399 cu. yds., crushed gravel 1,482 cu. yds., crushed stone 3,822 cu. yds., bridges repaired 21, culverts repaired 162.

Purchases: 1 tractor with front end loader and blade, 1 sand spreader, 1 gravel pit 10.0 acres.

Statute Labour Townships and Unorganized Units—Construction: Grade constructed 12.6 miles, C.I.P. culverts 100, wood culverts 16, pit-run gravel 20,536 cu. yds. placed on 13.5 miles of grade.

Maintenance: Roadside ditching 80.9 miles, off-take ditching 11,280 lin. ft., weed and brush cutting 81.35 miles, snow fence erected 21.15 miles, resurfacing pit-run gravel 39,982 cu. yds., sand 1,217 cu. yds., bridges repaired 30, culverts repaired 213, snowploughing statute labour and association roads 445.9 miles.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS,
CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED
TOWNSHIPS, BY COUNTIES AND DISTRICTS

April 1st, 1959 to March 31st, 1960

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway No. 2.....	\$ 38,279.29	\$ 62,417.07	\$ 100,696.36
" " 5.....	827.94	24,457.95	25,285.89
" " 24.....	88,685.63	26,741.35	115,426.98
" " 24A.....		22,818.12	22,818.12
" " 53.....	136.61	51,949.46	52,086.07
" " 54.....	138,415.12	43,876.01	182,291.13
" " 99.....	1,205.48	14,155.89	15,361.37
" " 403.....	670.51		670.51
Miscellaneous Surveys.....	4,681.36		4,681.36
Connecting Links:			
City of Brantford.....	130,247.85		130,247.85
Town of Paris.....		486.96	486.96
	\$ 403,149.79	\$ 246,902.81	\$ 650,052.60
Bruce:			
Highway No. 4.....	\$ 59,791.28	\$ 46,650.54	\$ 106,441.82
" " 6.....	511,343.67	176,217.10	687,560.77
" " 9.....	23,506.97	64,236.20	87,743.17
" " 21.....	269,850.35	242,996.22	512,846.57
" " 86.....	799.83	18,483.61	19,283.44
Sidewalks:			
Hamlet of Underwood.....	112.50		112.50
Connecting Links:			
Town of Hanover.....		498.10	498.10
Town of Kincardine.....		48,639.19	48,639.19
Village of Mildmay.....		956.70	956.70
Village of Teeswater.....		1,527.70	1,527.70
Town of Walkerton.....		9,714.77	9,714.77
Town of Wiarton.....		1,314.96	1,314.96
Development Roads:			
Elora Road.....	180,496.01		180,496.01
Sauble Beach By-Pass.....	78,422.92		78,422.92
	\$1,124,323.53	\$ 611,235.09	\$1,735,558.62
Carleton:			
Highway No. 15.....	\$ 46,459.77	\$ 44,031.97	\$ 90,491.74
" " 16.....	36,148.70	53,602.12	89,750.82
" " 17.....	776,891.96	85,025.65	861,917.61
" " 29.....	250,466.22	6,735.94	257,202.16
" " 31.....	10,175.56	59,688.83	69,864.39
" " 44.....	285.80	16,343.96	16,629.76
Ottawa Queensway.....	3,686,605.89		3,686,605.89
Connecting Link:			
City of Ottawa.....	673,915.35		673,915.35
Development Roads:			
Nepean Swamp Road.....	28,341.51		28,341.51
Connaught Ranges, Torbolton.....		27,359.94	27,359.94
Rideau River Road.....		31,247.36	31,247.36
Fitzroy Harbour Road.....	1,362.60		1,362.60
Fitzroy and Torbolton Boundary Road	27,557.73		27,557.73
Herbert's Corners to			
Gloucester Boundary.....	34,786.86		34,786.86
North Gower, Westerly.....	47,233.22		47,233.22
Carp North Road.....	19,345.05		19,345.05
	\$5,639,576.22	\$ 324,035.77	\$5,963,611.99

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Dufferin:			
Highway No. 9.....	\$ 30,774.84	\$ 43,244.14	\$ 74,018.98
" " 10.....	572,592.61	58,324.18	630,916.79
" " 24.....	5,116.63	26,412.31	31,528.94
" " 89.....	7,617.20	12,892.43	20,509.63
" " 104.....	224.96	4,421.89	4,646.85
Miscellaneous Surveys.....	166.41		166.41
Connecting Links:			
Town of Orangeville.....		783.00	783.00
Village of Shelburne.....		1,828.24	1,828.24
Development Roads:			
Shelburne - Mount Forest Road.....	255,949.34		255,949.34
Relessey Road.....	95,437.06		95,437.06
	\$ 967,879.05	\$ 147,906.19	\$1,115,785.24
Elgin:			
Highway No. 3.....	\$1,597,158.54	\$ 60,362.29	\$1,657,520.83
" " 4.....	24,122.44	47,826.66	71,949.10
" " 19.....	9,181.41	24,717.56	33,898.97
" " 73.....		24,080.61	24,080.61
" " 74.....	549.23	13,078.18	13,627.41
" " 75.....	29,086.55	4,598.15	33,684.70
" " 76.....	29,676.53	17,714.71	47,391.24
" " 77.....	36,186.25	5,768.65	41,954.90
" " 401.....	297,529.94		297,529.94
Connecting Links:			
Town of Aylmer.....		1,889.88	1,889.88
Village of Dutton.....		40.55	40.55
Village of Port Burwell.....		1,104.57	1,104.57
Development Road:			
Calton-Griffin's Corners.....	210,525.64		210,525.64
	\$2,234,016.53	\$ 201,181.81	\$2,435,198.34
Essex:			
Highway No. 2.....	\$ 27,703.20	\$ 40,294.42	\$ 67,997.62
" " 3.....	22,245.02	45,595.87	67,840.89
" " 3B.....	139,175.12	6,078.91	145,254.03
" " 18.....	106,768.33	98,957.64	205,725.97
" " 18A.....	6,077.55	19,783.87	25,861.42
" " 39.....	390,364.30	24,072.63	414,436.93
" " 98.....	2,567.42	36,882.51	39,449.93
" " 107.....		1,142.48	1,142.48
" " 114.....	298.52	1,201.88	1,500.40
" " 401.....	252,887.47	87,604.85	340,492.32
Pelee Island.....		21,726.88	21,726.88
Connecting Links:			
Town of Amherstburg.....		1,422.78	1,422.78
Town of Essex.....		2,296.83	2,296.83
Town of Harrow.....	130,138.15	1,029.85	131,168.00
Town of Kingsville.....		1,713.69	1,713.69
Town of Leamington.....	58,351.81	3,094.17	61,445.98
Town of Ojibway.....		4,410.60	4,410.60
Town of Tecumseh.....	26,753.27	1,648.36	28,401.63
	\$1,163,330.16	\$ 398,958.22	\$1,562,288.38
Frontenac:			
Highway No. 2.....	\$ 165,722.42	\$ 68,852.88	\$ 234,575.30
" " 7.....	76,270.74	62,954.00	139,224.74
" " 15.....	8,183.81	46,771.91	54,955.72
" " 33.....	79,855.03	9,639.51	89,494.54
" " 38.....	539,861.58	103,461.47	643,323.05
" " 41.....		12,171.07	12,171.07
" " 95.....	4,982.74	21,001.30	25,984.04
" " 96.....	47,200.90	57,189.86	104,390.76

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Frontenac (Cont'd):			
Highway No. 401.....	\$ 904,311.58	\$ 81,154.77	\$ 985,466.35
" " 506.....	37,513.97	47,593.06	85,107.03
" " 509.....	60,362.05	27,157.15	87,519.20
Miscellaneous Surveys.....	51.08	.....	51.08
Connecting Link:			
City of Kingston.....	20,386.18	.....	20,386.18
Development Roads:			
Perth Road.....	64,363.72	.....	64,363.72
Wolfe Lake Road.....	82,519.09	.....	82,519.09
Snow Road-Ompah Road, Palmerston	29,053.57	.....	29,053.57
Concessions 3 and 4, Pittsburg,			
Leeds and Lansdowne F.....	33,297.50	.....	33,297.50
Sydenham-Otter Lake Road.....	15,000.00	.....	15,000.00
Crown Lake Road.....	24,671.66	.....	24,671.66
Plevna-Ompah.....	14,918.87	.....	14,918.87
Harlowe-Arden.....	14,918.41	.....	14,918.41
Parham-Wagarville.....	12,070.12	.....	12,070.12
	\$2,235,515.02	\$ 537,946.98	\$2,773,462.00
Grey:			
Highway No. 4.....	\$ 22,707.11	\$ 74,557.06	\$ 97,264.17
" " 6.....	484,177.80	95,060.79	579,238.59
" " 10.....	1,545.97	66,984.89	68,530.86
" " 21.....	18,724.76	17,377.91	36,102.67
" " 24.....	336.99	7,525.37	7,862.36
" " 26.....	1,443.05	60,330.27	61,773.32
Miscellaneous Surveys.....	35.23	.....	35.23
Connecting Links:			
Village of Chatsworth.....	.....	556.97	556.97
Town of Durham.....	.....	3,298.03	3,298.03
Village of Flesherton.....	.....	1,643.52	1,643.52
Town of Hanover.....	.....	368.18	368.18
Village of Markdale.....	.....	1,179.81	1,179.81
Town of Meaford.....	.....	2,048.35	2,048.35
Town of Thornbury.....	.....	575.27	575.27
Development Roads:			
Pyette Pt.-Big Bay-Oxenden Road.....	51,530.54	.....	51,530.54
Shelburne-Mount Forest Road.....	95,581.04	.....	95,581.04
Hanover-Neustadt-Clifford Road.....	150,261.01	.....	150,261.01
Flesherton-Singhampton Road.....	204,358.86	.....	204,358.86
	\$1,030,702.36	\$ 331,506.42	\$1,362,208.78
Haldimand:			
Highway No. 3.....	\$ 16,159.58	\$ 149,147.10	\$ 165,306.68
" " 6.....	250,968.76	56,253.70	307,222.46
" " 54.....	101,494.29	38,005.59	139,499.88
" " 56.....	3,219.17	13,448.90	16,668.07
Connecting Links:			
Town of Caledonia.....	.....	316.16	316.16
Village of Cayuga.....	.....	730.95	730.95
Town of Dunnville.....	.....	1,891.46	1,891.46
Village of Hagersville.....	.....	662.81	662.81
Village of Jarvis.....	.....	2,780.87	2,780.87
Development Roads:			
Grand River Road.....	82,496.16	.....	82,496.16
Old Indian Line.....	71,278.60	.....	71,278.60
	\$ 525,616.56	\$ 263,237.54	\$ 788,854.10
Halton:			
Highway No. 2.....	\$ 7,631.88	\$ 86,214.22	\$ 93,846.10
" " 5.....	649,071.74	76,578.16	725,649.90
" " 6.....	.....	7,028.15	7,028.15
" " 7.....	32,409.19	42,112.08	74,521.27

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Halton (Cont'd):			
Highway No. 20	\$ 8,953.86	\$ 2,461.32	\$ 11,415.18
" " 25	52,416.10	84,476.03	136,892.13
" " 122	Cr. 3,544.73	22,856.13	19,311.40
" " 401	3,445,472.20	35,833.50	3,481,305.70
" " 403	339,690.23		339,690.23
Queen Elizabeth Way	2,784,463.65	198,376.60	2,982,840.25
Miscellaneous Surveys	5,742.63		5,742.63
Sidewalks:			
Town of Acton	3,577.02		3,577.02
Connecting Links:			
Town of Acton		1,297.83	1,297.83
Town of Burlington		654.09	654.09
Town of Georgetown		1,865.84	1,865.84
Town of Milton		8,815.52	8,815.52
	\$7,325,883.77	\$ 568,569.47	\$7,894,453.24
Hastings:			
Highway No. 2	\$ 2,546.87	\$ 77,509.87	\$ 80,056.74
" " 7	12,801.35	54,966.33	67,767.68
" " 14	7,653.02	92,056.19	99,709.21
" " 28	23,117.65	26,615.42	49,733.07
" " 33	19,582.63	26,587.29	46,169.92
" " 37	279,526.75	64,187.85	343,714.60
" " 62	106,537.59	146,429.47	252,967.06
" " 109	8,155.04	6,748.84	14,903.88
" " 127	7,703.99	23,098.74	30,802.73
" " 401	161,028.51	97,015.54	258,044.05
" " 500	48,055.63	66,964.16	115,019.79
" " 502	468.50	14,069.84	14,538.34
" " 517		11,273.11	11,273.11
" " 620	68,736.30	21,588.46	90,324.76
Sidewalks:			
Town of Belleville	16,461.38		16,461.38
Development Roads:			
Madoc-Moira Lake	7,067.52		7,067.52
Concessions 9 and 10,			
Hungerford Township	1,000.00		1,000.00
Halloway By-Pass	4,028.49		4,028.49
Ridge Road in Rawdon	45,898.78		45,898.78
Bird's Creek-Baptiste Road	45,373.69		45,373.69
Purdy-Centreview-Bell Rapids Rd.	19,460.01		19,460.01
Bannockburn-Cooper Road	17,136.15		17,136.15
Sulphide-Tweed Road	49,846.04		49,846.04
Concessions 11 and 12,			
Huntingdon Township	15,721.38		15,721.38
Sideroad 15/16-Wollaston Twp.	15,461.31		15,461.31
Highway 69-Gilmour	10,139.08		10,139.08
Webb's Hill Road		2,883.26	2,883.26
Greenbush Road		4,215.84	4,215.84
Madoc-Marmora Boundary	15,218.12		15,218.12
Sideroad 22/23-Tyendinaga Twp.	16,860.05		16,860.05
	\$1,025,585.83	\$ 736,210.21	\$1,761,796.04
Huron:			
Highway No. 4	\$ 19,082.27	\$ 94,919.39	\$ 114,001.66
" " 8	6,457.04	50,879.70	57,336.74
" " 9	89.90	2,170.25	2,260.15
" " 21	537,208.23	362,066.69	899,274.92
" " 23	3.87	9,020.67	9,024.54
" " 81	866.24	13,457.25	14,323.49
" " 83	540.03	31,634.28	32,174.31
" " 84	115.62	14,776.90	14,892.52
" " 86	118,916.28	77,466.05	196,382.33
" " 87	5,771.78	30,110.95	35,882.73

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Huron (Cont'd):			
Sidewalks:			
Town of Wingham.....	\$ 1,219.40	\$	\$ 1,219.40
Connecting Links:			
Town of Clinton.....	.....	3,028.17	3,028.17
Town of Exeter.....	.....	2,973.55	2,973.55
Town of Goderich.....	.....	172.89	172.89
Village of Lucknow.....	.....	618.54	618.54
Town of Seaforth.....	.....	1,906.34	1,906.34
Town of Wingham.....	.....	24,018.24	24,018.24
Development Road:			
Dunlop-Blyth.....	287,774.81	.....	287,774.81
	\$ 978,045.47	\$ 719,219.86	\$1,697,265.33
Kent:			
Highway No. 2.....	\$ 303,913.22	\$ 74,858.49	\$ 378,771.71
" " 3.....	77,096.25	111,286.51	188,382.76
" " 21.....	4,295.94	35,338.40	39,634.34
" " 40.....	1,309,905.66	34,095.19	1,344,000.85
" " 78.....	381.47	8,823.18	9,204.65
" " 79.....	949.48	3,353.73	4,303.21
" " 98.....	506,641.61	30,474.54	537,116.15
" " 401.....	686,814.57	.....	686,814.57
Connecting Links:			
Town of Blenheim.....	.....	982.18	982.18
Town of Bothwell.....	.....	3,481.00	3,481.00
Town of Dresden.....	.....	1,498.14	1,498.14
Town of Ridgetown.....	.....	2,337.09	2,337.09
Village of Thamesville.....	.....	194.76	194.76
Town of Tilbury.....	.....	1,136.36	1,136.36
Town of Wallaceburg.....	.....	1,652.83	1,652.83
Village of Wheatley.....	.....	255.96	255.96
Development Road:			
Highgate-Highway No. 3.....	10,624.26	.....	10,624.26
	\$2,900,622.46	\$ 309,768.36	\$3,210,390.82
Lambton:			
Highway No. 7.....	\$ 244,324.75	\$ 75,799.38	\$ 320,124.13
" " 21.....	33,949.87	72,296.20	106,246.07
" " 22.....	352.60	3,175.79	3,528.39
" " 40.....	12,664.13	34,462.11	47,126.24
" " 79.....	3,820.14	49,124.84	52,944.98
" " 80.....	75,523.10	6,890.48	82,413.58
" " 81.....	606.60	.....	606.60
" " 82.....	544.35	6,568.09	7,112.44
" " 83.....	.....	65,007.02	65,007.02
" " 402.....	741,235.04	9,119.74	750,354.78
Connecting Links:			
Village of Alvinston.....	.....	400.15	400.15
Town of Forest.....	.....	1,386.55	1,386.55
Village of Thedford.....	.....	1,635.92	1,635.92
Village of Wyoming.....	.....	202.53	202.53
Development Roads:			
Alvinston-Courtright Road.....	621,749.38	.....	621,749.38
Plympton-Bosanquet.....	6,091.90	.....	6,091.90
	\$1,740,861.86	\$ 326,068.80	\$2,066,930.66
Lanark:			
Highway No. 7.....	\$ 25,057.69	\$ 49,979.27	\$ 75,036.96
" " 15.....	1,019,462.48	89,549.04	1,109,011.52
" " 17.....	5,025.60	.....	5,025.60
" " 29.....	167,914.56	63,541.94	231,456.50
" " 44.....	67.54	8,023.79	8,091.33
" " 110.....	.....	2,188.28	2,188.28

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lanark (Cont'd):			
Highway No. 511	\$ 31,702.61	\$ 8,536.12	\$ 40,238.73
Connecting Link:			
Town of Almonte	.....	1,004.08	1,004.08
Development Roads:			
French Line Road	.....	9,994.78	9,994.78
Maberly-Bolingbroke Road	11,385.25	.....	11,385.25
Lanark-Elphir Road	72,821.99	.....	72,821.99
Relocation County Road 12B	801.95	.....	801.95
Concessions 1 and 2,			
Dalhousie Township	6,184.66	.....	6,184.66
Merrywood Road	48,990.60	.....	48,990.60
Smith Falls-North Gower	48,369.18	.....	48,369.18
Bellamy Road	9,990.56	.....	9,990.56
	\$1,447,774.67	\$ 232,817.30	\$1,680,591.97
Leeds and Grenville:			
Highway No. 2	\$ 34,849.61	\$ 617,486.92	\$ 652,336.53
" " 15	319,100.66	68,648.42	387,749.08
" " 16	7,678.39	48,390.30	56,068.69
" " 29	26,907.17	42,206.36	69,113.53
" " 32	15,687.85	26,764.71	42,452.56
" " 42	912.12	94,798.65	95,710.77
" " 401	6,230,701.50	103,830.71	6,334,532.21
Hill Island Road	.....	3,883.35	3,883.35
Miscellaneous Surveys	15.69	.....	15.69
Sidewalks:			
Village of Kemptville	1,696.66	.....	1,696.66
Connecting Links:			
Town of Gananoque	26,466.92	.....	26,466.92
Village of Kemptville	.....	214.18	214.18
Development Roads:			
Athens-Charleston	17,035.59	.....	17,035.59
Houghton Bay Road	14,915.55	.....	14,915.55
Escott-Rockport Road	8,645.79	.....	8,645.79
Athens-Mallorytown	38,953.30	.....	38,953.30
County Road No. 11	72,993.41	.....	72,993.41
Kemptville-County Road No. 24	95,494.37	.....	95,494.37
Lilly's Corners-Lyndhurst	44,000.00	.....	44,000.00
Bay Road	13,436.66	.....	13,436.66
Snowden Road	45,058.75	.....	45,058.75
Warburton-Long Point	14,248.46	.....	14,248.46
Glen Smail West Road	3,069.10	.....	3,069.10
	\$7,031,867.55	\$1,006,223.60	\$8,038,091.15
Lennox and Addington:			
Highway No. 2	\$ 69,705.26	\$ 49,363.35	\$ 119,068.61
" " 7	14,836.87	21,670.33	36,507.20
" " 33	80,777.15	75,364.93	156,142.08
" " 41	743,180.43	105,094.08	848,274.51
" " 401	588,183.92	.....	588,183.92
Ferries	8,375.98	61,792.94	70,168.92
Highway No. 500	Cr. 59.31	.....	Cr. 59.31
" " 502	154,479.19	Cr. 389.19	154,090.00
Miscellaneous Surveys	583.96	.....	583.96
Sidewalks:			
Village of Selby	51.57	.....	51.57
Development Roads:			
Croydon-Reidville	15,494.04	.....	15,494.04
Tamsworth-Centreville	43,669.80	.....	43,669.80
Denbigh-Raglan	.....	13,628.94	13,628.94
Beechwood Road	9,504.55	.....	9,504.55
Flinton Road	13,378.00	.....	13,378.00

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lennox and Addington (Cont'd):			
Adolphus Reach Road.....	\$	\$ 2,626.45	\$ 2,626.45
Hay Bay Road.....	3,752.42	.....	3,752.42
	\$1,745,913.83	\$ 329,151.83	\$2,075,065.66
Lincoln:			
Highway No. 8.....	\$ 4,534.91	\$ 87,246.42	\$ 91,781.33
" " 8A.....	1,549.79	8,057.95	9,607.74
" " 20.....	6,985.96	60,047.04	67,033.00
" " 57.....	2,149.24	6,414.28	8,563.52
" " 58.....	258.69	7,644.74	7,903.43
Queen Elizabeth Way.....	780,718.01	179,389.30	960,107.31
Miscellaneous Surveys.....	1,618.50	.....	1,618.50
Connecting Links:			
Village of Beamsville.....	.....	702.75	702.75
Town of Grimsby.....	.....	1,718.81	1,718.81
City of St. Catharines.....	.....	23.30	23.30
	\$ 797,815.10	\$ 351,244.59	\$1,149,059.69
Middlesex:			
Highway No. 2.....	\$ 706,410.01	\$ 99,091.72	\$ 805,501.73
" " 4.....	203,227.00	99,213.31	302,440.31
" " 7.....	339,012.29	68,908.08	407,920.37
" " 22.....	648,192.78	24,416.80	672,609.58
" " 23.....	84.59	14,397.12	14,481.71
" " 73.....	.....	9,577.45	9,577.45
" " 74.....	7,535.15	19,917.88	27,453.03
" " 76.....	1,252.15	5,983.27	7,235.42
" " 80.....	125,756.25	10,275.88	136,032.13
" " 81.....	209,704.55	67,383.39	277,087.94
" " 135.....	64,949.29	7,164.24	72,113.53
" " 401.....	425,760.85	103,166.56	528,927.41
Miscellaneous Surveys.....	2,553.36	.....	2,553.36
Connecting Links:			
City of London.....	40,845.91	.....	40,845.91
Village of Lucan.....	.....	1,853.87	1,853.87
Town of Parkhill.....	.....	1,466.39	1,466.39
Development Road:			
Highway No. 7-Clandeboye.....	117,824.25	.....	117,824.25
	\$2,893,108.43	\$ 532,815.96	\$3,425,924.39
Norfolk:			
Highway No. 3.....	\$ 126,079.65	\$ 54,264.00	\$ 180,343.65
" " 6.....	187.20	25,847.24	26,034.44
" " 19.....	5.50	4,754.31	4,759.81
" " 24.....	3,255.24	45,262.87	48,518.11
" " 59.....	.....	4,825.79	4,825.79
Sidewalks:			
Township of Woodhouse.....	71.82	.....	71.82
Connecting Links:			
Town of Delhi.....	.....	312.69	312.69
Town of Simcoe.....	14,986.71	1,188.12	16,174.83
Development Roads:			
Long Point Park Road.....	385.50	.....	385.50
Courtland-Port Rowan.....	505,066.68	.....	505,066.68
	\$ 650,038.30	\$ 136,455.02	\$ 786,493.32
Northumberland and Durham:			
Highway No. 2.....	\$ 111,792.91	\$ 296,113.24	\$ 407,906.15
" " 7A.....	321,937.43	62,575.99	384,513.42
" " 28.....	174,450.29	55,845.43	230,295.72
" " 30.....	3,453.41	67,416.54	70,869.95
" " 33.....	7,514.76	11,158.32	18,673.08

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Northumberland and Durham (Cont'd):			
Highway No. 35.....	\$ 7,690.66	\$ 86,892.90	\$ 94,583.56
" " 45.....	97,053.19	70,720.12	167,773.31
" " 106.....	19.58	68,327.22	68,346.80
" " 115.....	19,760.07	59,006.00	78,766.07
" " 133.....		1,436.38	1,436.38
" " 401.....	7,440,916.30	148,239.30	7,589,155.60
Miscellaneous Surveys.....	887.59		887.59
Connecting Links:			
Village of Brighton.....		16.58	16.58
Town of Campbellford.....		518.91	518.91
Village of Hastings.....		828.80	828.80
Village of Newcastle.....		319.24	319.24
Town of Port Hope.....		10,315.23	10,315.23
Town of Trenton.....	7,450.12		7,450.12
Development Roads:			
Highway No. 45—Graecen's Corners.....	8,999.98		8,999.98
Morganston—Cuff's Corners.....	330,341.43		330,341.43
Kendal—Garden Hill.....	196,128.56		196,128.56
	\$8,728,396.28	\$ 939,730.20	\$9,668,126.48
Ontario:			
Highway No. 2.....	\$ 21,111.49	\$ 85,361.93	\$ 106,473.42
" " 7.....	27,978.85	225,366.46	253,345.31
" " 7A.....	16,004.39	18,364.04	34,368.43
" " 12.....	358,396.52	147,780.87	506,177.39
" " 47.....	Cr. 1,293.31	99,956.94	98,663.63
" " 48.....	1,210.54	31,230.51	32,441.05
" " 69.....	411.59	46,770.89	47,182.48
" " 401.....	1,228,563.55	237,797.12	1,466,360.67
" " 503.....	61.55		61.55
Sidewalks:			
City of Oshawa.....	1,376.63		1,376.63
Connecting Links:			
Village of Beaverton.....		519.78	519.78
Village of Port Perry.....		2,547.10	2,547.10
Town of Uxbridge.....		3,218.93	3,218.93
Town of Whitby.....		17,488.09	17,488.09
Development Roads:			
Cooper's Falls Road.....	8,756.60		8,756.60
Manchester—Goodwood.....	23,210.77		23,210.77
	\$1,685,789.17	\$ 916,402.66	\$2,602,191.83
Oxford:			
Highway No. 2.....	\$ 6,083.26	\$ 80,651.24	\$ 86,734.50
" " 3.....	30,322.68	3,725.20	34,047.88
" " 19.....	825,225.93	65,859.25	891,085.18
" " 53.....		9,948.60	9,948.60
" " 59.....	1,307.03	38,373.51	39,680.54
" " 97.....	34,347.52	58,800.07	93,147.59
" " 100.....	248,628.41	76,205.30	324,833.71
" " 401.....	1,979,390.75	90,900.09	2,070,290.84
" " 403.....	61.72		61.72
Miscellaneous Surveys.....	2,336.20		2,336.20
Sidewalks:			
Village of Norwich.....	382.00		382.00
Connecting Links:			
Sep. Town of Ingersoll.....	82,192.25		82,192.25
Village of Tavistock.....		4,355.89	4,355.89
Town of Tillsonburg.....		45.72	45.72
	\$3,210,277.75	\$ 428,864.87	\$3,639,142.62

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Peel:			
Highway No. 2.....	\$ 198,285.65	\$ 59,632.20	\$ 257,917.85
" " 5.....	337,393.34	84,766.81	422,160.15
" " 7.....	37,385.49	60,784.06	98,169.55
" " 9.....	1,152.31	34,843.97	35,996.28
" " 10.....	195,614.21	184,307.79	379,922.00
" " 24.....	108,754.40	39,292.20	148,046.60
" " 50.....	13,145.32	63,747.65	76,892.97
" " 51.....	258,733.33	5,196.90	263,930.23
" " 122.....	225.65	11,162.26	11,387.91
" " 401.....	1,608,095.63	65,513.62	1,673,609.25
" " 403.....	18,468.33		18,468.33
Queen Elizabeth Way.....	1,603,771.30	99,271.67	1,703,042.97
Miscellaneous Surveys.....	1,848.97		1,848.97
Connecting Links:			
Town of Brampton.....		839.57	839.57
Village of Port Credit.....		5,111.26	5,111.26
Development Roads:			
Third Line East, Caledon Twp.....	6,898.98		6,898.98
Fourth Line Road, Albion Twp.....	68,421.15		68,421.15
Heart Lake Road.....	73,999.02		73,999.02
	\$4,532,193.08	\$ 714,469.96	\$5,246,663.04
Perth:			
Highway No. 7.....	\$ 140,280.63	\$ 81,472.63	\$ 221,753.26
" " 8.....	29,716.24	51,803.04	81,519.28
" " 19.....	725,440.37	65,038.36	790,478.73
" " 23.....	110,616.08	123,997.42	234,613.50
" " 83.....		4,907.95	4,907.95
" " 86.....	4,242.18	39,628.84	43,871.02
" " 100.....	183.20	12,075.77	12,258.97
Miscellaneous Surveys.....	63.12		63.12
Connecting Links:			
Town of Listowel.....		106.68	106.68
Village of Milverton.....		447.10	447.10
Town of Mitchell.....		6,261.78	6,261.78
Town of Palmerston.....		677.47	677.47
Sep. Town of St. Mary's.....	13,801.54		13,801.54
Development Road:			
Millbank Road.....	1,485.14		1,485.14
	\$1,025,828.50	\$ 386,417.04	\$1,412,245.54
Peterborough:			
Highway No. 7.....	\$1,128,515.45	\$ 99,063.47	\$1,227,578.92
" " 7A.....	2,359.82		2,359.82
" " 28.....	503,067.10	80,708.33	583,775.43
" " 30.....		6,375.63	6,375.63
" " 36.....	7,591.60	56,707.23	64,298.83
" " 45.....	109,663.86	14,852.65	124,516.51
" " 115.....	29,358.21		29,358.21
" " 121.....		12,487.94	12,487.94
" " 133.....	241,676.25	11,371.46	253,047.71
" " 500.....	18,317.94	7,175.10	25,493.04
" " 504.....	20,158.45	64,119.88	84,278.33
" " 507.....	4,903.88	35,316.36	40,220.24
Miscellaneous Surveys.....	12.02		12.02
Connecting Link:			
Village of Lakefield.....		515.26	515.26
Development Roads:			
Church Line Road.....	6,878.25		6,878.25
Katchiwano Lake Road.....	69,978.64		69,978.64
Hastings-Keen.....	54,899.93		54,899.93
	\$2,197,381.40	\$ 388,693.31	\$2,586,074.71

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Prince Edward:			
Highway No. 14.....	\$ 535,199.73	\$ 31,995.90	\$ 567,195.63
" " 33.....	254,973.95	61,069.65	316,043.60
" " 41.....	3,477.00	19,503.62	22,980.62
Ferries.....	8,375.99	61,792.95	70,168.94
Development Roads:			
Carrying Place-Rednersville.....	556.99	.....	556.99
Hallowell-Hillier Townline.....	360.16	.....	360.16
Pictou-Black River.....	67,676.40	.....	67,676.40
Seoharie Road.....	15,000.00	.....	15,000.00
	\$ 885,620.22	\$ 174,362.12	\$ 1,059,982.34
Prescott and Russell:			
Highway No. 17.....	\$ 6,276.07	\$ 192,295.92	\$ 198,571.99
" " 34.....	679.43	20,548.55	21,227.98
Connecting Links:			
Town of Hawkesbury.....	.....	3,942.71	3,942.71
Village of L'Orignal.....	.....	542.94	542.94
Town of Rockland.....	.....	990.05	990.05
Development Roads:			
Russell-Embrun.....	94,486.10	.....	94,486.10
County Road No. 13.....	47,803.16	.....	47,803.16
Fournier-Routhier.....	13,196.44	.....	13,196.44
Vankleek Hill-Westerly.....	26,069.08	.....	26,069.08
Rose Corners-St. Isidore.....	78,990.15	.....	78,990.15
	\$ 267,500.43	\$ 218,320.17	\$ 485,820.60
Renfrew:			
Highway No. 17.....	\$1,398,771.62	\$ 286,180.74	\$1,684,952.36
" " 29.....	25,691.06	1,169.49	26,860.55
" " 41.....	54,412.31	38,543.19	92,955.50
" " 60.....	243,725.83	75,832.21	319,558.04
" " 62.....	509,625.47	21,642.96	531,268.43
" " 127.....	95,465.27	.....	95,465.27
" " 132.....	30,949.13	36,411.59	67,360.72
" " 500.....	4,345.64	.....	4,345.64
" " 508.....	20,923.62	25,992.25	46,915.87
" " 511.....	.....	10,312.90	10,312.90
" " 512.....	36,195.74	26,663.82	62,859.56
" " 513.....	3,953.87	19,057.36	23,011.23
" " 515.....	8,749.05	22,775.18	31,524.23
" " 517.....	26.58	7,643.66	7,670.24
" " 521.....	24,503.42	19,002.63	43,506.05
" " 635.....	28.13	182.46	210.59
Miscellaneous Surveys.....	8,828.51	.....	8,828.51
Connecting Link:			
Town of Renfrew.....	.....	2,758.69	2,758.69
Development Roads:			
Hardwood Lake Road.....	45,760.57	.....	45,760.57
Kelly's Corners-Cobden.....	4,005.14	.....	4,005.14
Lake Dore-Golden Lake.....	3,355.10	.....	3,355.10
Combermere-Hopefield.....	.....	Cr. 117.30	Cr. 117.30
Black Donald-Matawatchan.....	170,448.26	.....	170,448.26
Bonnechere River Road.....	10,283.23	.....	10,283.23
McGrath Road-Clontarf.....	17,986.72	.....	17,986.72
Concession 6/7, Westmeath Twp.....	13,071.01	.....	13,071.01
Pucker Street.....	34,201.62	.....	34,201.62
Admanston-Bagot Townline.....	28,060.37	.....	28,060.37
Sand Point Road.....	28,369.35	.....	28,369.35
	\$2,821,736.62	\$ 594,051.83	\$3,415,788.45
Simcoe:			
Highway No. 9.....	\$ 15,385.76	\$ 35,458.03	\$ 50,843.79
" " 11.....	1,132,310.52	221,100.87	1,353,411.39

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
Highway No. 12	\$ 136,943.94	\$ 59,197.04	\$ 196,140.98
" " 24	17.82	34,602.32	34,620.14
" " 26	31,542.81	77,787.33	109,330.14
" " 27	20,037.57	178,551.47	198,589.04
" " 88	1,317.51	23,938.26	25,255.77
" " 89	12,184.48	41,398.60	53,583.08
" " 90	76,309.82	30,017.87	106,327.69
" " 91	100.00	21,794.56	21,894.56
" " 92	41,694.78	22,505.48	64,200.26
" " 93	77,970.22	61,172.50	139,142.72
" " 103	29,510.14	7,718.84	37,228.98
" " 400	1,774,568.85	306,535.80	2,081,104.65
Sunnidale Road	93,147.38		93,147.38
Miscellaneous Surveys	6,652.88		6,652.88
Sidewalks:			
Township of Tay	1,099.38		1,099.38
Connecting Links:			
Town of Alliston		507.70	507.70
Village of Coldwater		1,104.47	1,104.47
Town of Collingwood	16,583.11	1,691.37	18,274.48
Town of Orillia		6,803.46	6,803.46
Town of Penetang		221.25	221.25
Village of Port McNicoll		779.97	779.97
Town of Stayner		839.56	839.56
Village of Victoria Harbour		2,379.22	2,379.22
Development Roads:			
Champlain Road	1,100.00		1,100.00
Angus Creemore Road	124,145.95		124,145.95
Glen Huron Dunedin	29,222.96		29,222.96
15th Sideroad, Flos Township	35,586.85		35,586.85
Sunnyside Road	20,604.02		20,604.02
Loretto Road	40,213.57		40,213.57
Essa-Innisfil Townline	1,000.00		1,000.00
	\$3,719,250.32	\$1,136,105.97	\$4,855,356.29
Stormont, Dundas and Glengarry:			
Highway No. 2	\$ 169,172.20	\$ 126,889.03	\$ 296,061.23
" " 31	20,067.19	40,662.69	60,729.88
" " 34	3,207.16	199,267.54	202,474.70
" " 43	279,436.61	62,025.54	341,462.15
" " 401	1,731,423.99	31,425.70	1,762,849.69
Miscellaneous Surveys	120.43		120.43
Sidewalks:			
Town of Alexandria	749.86		749.86
Connecting Links:			
Town of Alexandria		4,949.53	4,949.53
City of Cornwall	27,448.65		27,448.65
Village of Morrisburg		2,076.73	2,076.73
Village of Winchester		2,687.59	2,687.59
Development Roads:			
Winchester-Melvin	5,083.83		5,083.83
Hullville-Reids Mill	34,411.18		34,411.18
Concession 6/7, Williamsburgh Twp.	15,326.82		15,326.82
Concession 4/5, Lochiel Twp.	14,977.73		14,977.73
Concession 8, Cornwall Township	3,176.10		3,176.10
Concession 7/8, Matilda Township	14,998.71		14,998.71
County Road No. 21	43,341.66		43,341.66
	\$2,362,942.12	\$ 469,984.35	\$2,832,926.47
Victoria:			
Highway No. 7	\$ 75,820.19	\$ 180,781.46	\$ 256,601.65
" " 35	9,982.80	101,866.04	111,848.84
" " 35A	674.28	42,594.50	43,268.78
" " 36	88,347.33	33,838.30	122,185.63

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Victoria (Cont'd):			
Highway No. 46...	\$ 119,813.24	\$ 43,811.48	\$ 163,624.72
" " 121...	.....	27,179.96	27,179.96
" " 133	115,324.35	5,105.45	120,429.80
" " 500	53,588.72	Cr. 36,902.36	16,686.36
" " 503	175,586.05	103,051.01	278,637.06
" " 505	190.20	15,832.41	16,022.61
Connecting Links:			
Village of Fenelon Falls.....	.....	690.09	690.09
Town of Lindsay.....	.....	9,808.36	9,808.36
Village of Omemee.....	.....	973.40	973.40
Development Road:			
Pidgeon Lake Road.....	41,032.39	.....	41,032.39
	\$ 680,359.55	\$ 528,630.10	\$1,208,989.65
Waterloo:			
Highway No. 7.....	\$ 166,927.28	\$ 67,633.30	\$ 234,560.58
" " 8	265,724.85	16,360.56	282,085.41
" " 24	20,238.29	21,199.35	41,437.64
" " 24A	.....	24,413.39	24,413.39
" " 85	32.01	19,889.08	19,921.09
" " 86	152,233.31	62,909.41	215,142.72
" " 97	328,702.39	29,329.49	358,031.88
" " 401	3,335,374.71	.....	3,335,374.71
Miscellaneous Surveys	62.73	.....	62.73
Sidewalks:			
Village of Baden.....	2,901.00	.....	2,901.00
Connecting Links:			
Town of Elmira .....	.....	1,555.10	1,555.10
Town of Hespeler .....	.....	616.18	616.18
Village of New Hamburg.....	.....	2,110.21	2,110.21
Town of Preston.....	.....	743.23	743.23
Development Road:			
Elmira By-pass	32,948.19	.....	32,948.19
	\$4,305,144.76	\$ 246,759.30	\$4,551,904.06
Welland:			
Highway No. 3	\$ 16,828.85	\$ 130,514.94	\$ 147,343.79
" " 3A	1,636.89	26,423.43	28,060.32
" " 3C	685.11	25,481.47	26,166.58
" " 8	12,258.04	9,730.58	21,988.62
" " 20	3,477.88	57,442.73	60,920.61
" " 57	.....	13,500.61	13,500.61
" " 58	82,755.17	52,041.86	134,797.03
Queen Elizabeth Way.....	48,276.27	199,532.40	247,808.67
Miscellaneous Surveys.....	1,075.06	.....	1,075.06
Connecting Links:			
Town of Fort Erie.....	10,516.10	414.26	10,930.36
City of Niagara Falls	42,607.34	122.74	42,730.08
Town of Port Colborne.....	.....	2,224.15	2,224.15
City of Welland	.....	227.97	227.97
	\$ 220,116.71	\$ 517,657.14	\$ 737,773.85
Wellington:			
Highway No. 6.....	\$ 100,093.99	\$ 109,403.68	\$ 209,497.67
" " 7	7,075.06	46,356.48	53,431.54
" " 9	47,604.51	70,841.67	118,446.18
" " 10	6.53	9,689.10	9,695.63
" " 23	42,671.16	8,321.32	50,992.48
" " 24	139,096.30	51,634.96	190,731.26
" " 86	574.09	46,985.81	47,559.90
" " 87	1,780.03	10,192.78	11,972.81
" " 401	2,181,198.44	.....	2,181,198.44
Miscellaneous Surveys..	402.62	.....	402.62

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Wellington (Cont'd):			
Connecting Links:			
Village of Arthur.....	\$	\$ 1,638.84	\$ 1,638.84
Village of Clifford.....	.....	937.91	937.91
Town of Fergus.....	.....	13,004.21	13,004.21
Town of Harriston.....	.....	2,082.86	2,082.86
Town of Mount Forest.....	.....	1,192.77	1,192.77
Development Roads:			
Mount Forest-Shelburne.....	40,310.42	.....	40,310.42
Sideroad 20/21, Minto Township.....	31,817.89	.....	31,817.89
County Road No. 85.....	27,440.47	.....	27,440.47
County Road No. 65.....	2,625.00	.....	2,625.00
	\$2,622,696.51	\$ 372,282.39	\$2,994,978.90
Wentworth:			
Highway No. 2.....	\$ 43,594.12	\$ 55,938.99	\$ 99,533.11
" " 5.....	25,481.18	58,931.48	84,412.66
" " 6.....	19,378.01	108,687.35	128,065.36
" " 8.....	790,519.24	71,790.15	862,309.39
" " 20.....	419,177.64	42,325.52	461,503.16
" " 52.....	4,568.58	46,735.02	51,303.60
" " 53.....	656,188.86	43,620.57	699,809.43
" " 55.....	242,839.69	6,293.78	249,133.47
" " 56.....	2,907.89	24,491.13	27,399.02
" " 97.....	13,681.28	32,169.73	45,851.01
" " 99.....	26,178.61	39,356.66	65,535.27
" " 102.....	2,428.99	10,736.68	13,165.67
" " 403.....	70,934.36	.....	70,934.36
Queen Elizabeth Way.....	405,955.31	164,957.37	570,912.68
Miscellaneous Surveys.....	71,139.57	.....	71,139.57
Sidewalks:			
Village of Ancaster.....	504.25	.....	504.25
Connecting Links:			
Town of Dundas.....	.....	273.61	273.61
City of Hamilton.....	521,835.06	23,789.19	545,624.25
	\$3,317,312.64	\$ 730,097.23	\$4,047,409.87
York:			
Highway No. 2.....	\$ 105,538.90	\$ 12,000.57	\$ 117,539.47
" " 5.....	1,155.55	7,163.23	8,318.78
" " 7.....	268,067.93	148,026.22	416,094.15
" " 9.....	4,058.02	12,361.33	16,419.35
" " 11.....	167,981.57	174,431.43	342,413.00
" " 27.....	471,422.84	190,838.90	662,261.74
" " 47.....	16,323.85	27,658.24	43,982.09
" " 48.....	584,122.69	199,474.28	783,596.97
" " 49.....	48,567.21	15,854.52	64,421.73
" " 50.....	208.89	12,968.43	13,177.32
" " 400.....	760,609.61	217,467.67	978,077.28
" " 401.....	1,166,003.49	420,259.62	1,586,263.11
" " 403.....	112.43	.....	112.43
Queen Elizabeth Way.....	94,561.95	90,827.75	185,389.70
Queensway.....	15,060.76	.....	15,060.76
Bloor Street.....	288,488.17	.....	288,488.17
Yonge Street.....	14,934.22	.....	14,934.22
Dundas Street.....	213,802.01	.....	213,802.01
Lakeshore Expressway.....	6,161.80	.....	6,161.80
Miscellaneous Surveys.....	9,014.43	.....	9,014.43
Connecting Link:			
Town of Richmond Hill.....	.....	3,843.20	3,843.20
	\$4,236,196.32	\$1,533,175.39	\$5,769,371.71

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin:			
Highway No. 17.....	\$9,087,779.02	\$ 457,869.68	\$9,545,648.70
" 68.....	122,018.16	319,688.67	441,706.83
" 108.....	1,244,432.41	53,642.51	1,298,074.92
" 129.....	43,380.41	175,346.27	218,726.68
Ferries.....		89,922.48	89,922.48
Highway No. 538.....	525.54	6,785.02	7,310.56
" 540.....	56,788.92	217,654.35	274,443.27
" 542.....	7,649.19	143,303.06	150,952.25
" 546.....	10,914.89	77,606.27	88,521.16
" 548.....	112,800.79	58,937.55	171,738.34
" 550.....	53,387.85	20,307.78	73,695.63
" 551.....	3,911.76	58,728.53	62,640.29
" 552.....		9,652.82	9,652.82
" 553.....	6,912.77	19,760.39	26,673.16
" 554.....		13,170.88	13,170.88
" 555.....	2,910.63	15,230.49	18,141.12
" 556.....	9,776.50	46,234.03	56,010.53
" 557.....	5,821.28	26,170.93	31,992.21
" 561.....	2,546.82	37,713.76	40,260.58
" 563.....		3,470.46	3,470.46
" 565.....	14,108.29	6,469.65	20,577.94
" 631.....	18,554.65	27,313.24	45,867.89
Burwash-Killarney.....	330,328.01		330,328.01
Miscellaneous Surveys.....	37,023.78		37,023.78
Connecting Link:			
Town of Thessalon.....		311.75	311.75
Unincorporated Townships:			
Campbell.....		8,713.16	8,713.16
Dawson.....		2,542.68	2,542.68
Mills.....		3,495.13	3,495.13
Robinson.....		6,209.82	6,209.82
Aberdeen.....	6,432.73	5,250.17	11,682.90
Aweres.....		89.20	89.20
Bridgeland.....		20.08	20.08
Bright.....		28.87	28.87
Cobden.....		1,747.72	1,747.72
Deroche.....		20.57	20.57
Fenwick.....		2,409.12	2,409.12
Galbraith.....		5,092.42	5,092.42
Garden River Indian Reserve.....		366.57	366.57
Gaudette.....		847.31	847.31
Goulais Indian Reserve.....		98.01	98.01
Hodgins.....		50.82	50.82
Houghton.....		20.09	20.09
Kars.....		459.26	459.26
Kehoe.....		421.27	421.27
Kirkwood.....		173.67	173.67
Lewis.....	2,728.55	41.67	2,770.22
Long.....		8.50	8.50
Mississagi Indian Reserve.....		40.20	40.20
Morin.....		42.75	42.75
McMahon.....	6,573.58	564.55	7,138.13
Patton.....		614.73	614.73
Plummer.....	7,444.61	3,888.26	11,332.87
Ranger Lake Area.....		3,051.33	3,051.33
Rose.....		2,740.05	2,740.05
Serpent River Indian Reserve.....		569.13	569.13
Shedden.....		5,146.66	5,146.66
Shields.....		847.30	847.30
Spanish River Indian Reserve.....	13,112.90	9,942.31	23,055.21
Spragge.....		23.46	23.46
Striker.....		149.42	149.42
Township 28 Range 24.....		4,629.41	4,629.41
Township 29 Range 24.....		1,543.13	1,543.13
Township 125.....		240.75	240.75
Township 130.....	746.49	107.37	853.86

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Township 131.....	\$ 746.50	\$ 107.38	\$ 853.88
Vankoughnet.....		1,479.41	1,479.41
Victoria.....		7,344.88	7,344.88
Wells.....		16.72	16.72
Development Roads:			
Cloudslee.....	13,131.75		13,131.75
Assiginack-Shequiandah-Bidwell.....		42,835.00	42,835.00
Dean Lake Road.....	5,318.88		5,318.88
Fourth Line, Tarentorus Twp.....	576.65		576.65
Fourth Line, Korah Twp.....	9,305.96		9,305.96
Bar River Road.....	32,055.01		32,055.01
	\$11,269,745.28	\$2,009,320.88	\$13,279,066.16
Cochrane:			
Highway No. 11.....	\$6,124,220.16	\$ 210,599.00	\$6,334,819.16
" " 67.....	11,910.16	35,548.38	47,458.54
" " 101.....	156,676.76	150,930.14	307,606.90
" " 112.....		Cr. 800.00	Cr. 800.00
Ferries.....		28,212.82	28,212.82
Highway No. 572.....	11,080.57	Cr. 2,873.82	8,206.75
" " 574.....	25,901.61	41,813.39	67,715.00
" " 575.....		4,442.61	4,442.61
" " 576.....		3,206.10	3,206.10
" " 577.....	8,043.55	29,795.34	37,838.89
" " 578.....	3,492.90	21,965.40	25,458.30
" " 579.....	19,386.86	34,093.90	53,480.76
" " 581.....		11,845.82	11,845.82
" " 583.....	35,026.10	62,756.60	97,782.70
" " 610.....		17,392.15	17,392.15
" " 629.....	107,908.75	Cr. 11,544.16	96,364.59
" " 631.....	2,880.99		2,880.99
Miscellaneous Surveys.....	237.18		237.18
Sidewalks:			
Village of Moonbeam.....	801.17		801.17
Village of Ansonville.....	2,113.32		2,113.32
Village of S. Porcupine.....	1,479.32		1,479.32
Connecting Links:			
Town of Cochrane.....		2,064.98	2,064.98
Town of Matheson.....		498.34	498.34
Unincorporated Townships:			
Deloro.....	10,609.09		10,609.09
Evelyn.....		5,124.83	5,124.83
German.....		3,211.72	3,211.72
Godfrey.....		1,625.09	1,625.09
Jamieson.....		1,515.10	1,515.10
Macklem.....		939.11	939.11
Matheson.....		3,578.19	3,578.19
McCann.....		52.78	52.78
Ogden.....		23.75	23.75
Robb.....		1,625.09	1,625.09
Shaw.....		2,213.68	2,213.68
Sheraton.....		1,049.66	1,049.66
Barker.....		90.27	90.27
Brower.....	2,385.79	2,757.24	5,143.03
Calder.....	1,416.47	3,661.21	5,077.68
Casgrain.....	7,592.98	3,038.52	10,631.50
Clute.....	1,416.47	5,959.51	7,375.98
Devitt.....	4,178.90	2,165.44	6,344.34
Eilber.....	4,178.89	1,479.99	5,658.88
Fournier.....	1,475.77	2,761.54	4,237.31
Fox.....		345.49	345.49
Hanlan.....		5,557.04	5,557.04
Idington.....		3,189.12	3,189.12
Kendal.....	8,135.94	9,072.32	17,208.26
Kennedy.....	5,971.16	1,677.84	7,649.00

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Lamarche.....	\$	\$ 4,990.26	\$ 4,990.26
Lowther.....	.....	4,378.70	4,378.70
McCrea.....	.....	810.53	810.53
Nansen.....	3,075.03	791.53	3,866.56
Newmarket.....	2,637.36	2,072.48	4,709.84
O'Brien.....	.....	3,172.00	3,172.00
Owens.....	2,275.98	4,582.32	6,858.30
Pyne.....	.....	1,184.78	1,184.78
Way.....	.....	13,761.92	13,761.92
Williamson.....	1,009.25	5,712.36	6,721.61
Playfair Loop Road.....	14,529.24	.....	14,529.24
Sideroad 6/7, Mountjoy Township.....	3,945.95	.....	3,945.95
North Road in Carr.....	.....	2,983.95	2,983.95
Boyd's Road in Clerque.....	.....	14,307.13	14,307.13
	\$6,585,993.67	\$ 761,409.48	\$7,347,403.15
Haliburton:			
Highway No. 28.....	\$ 9,702.98	\$ 19,652.35	\$ 29,355.33
" " 35.....	17,617.06	65,230.15	82,847.21
" " 60.....	1,433.58	4,119.82	5,553.40
" " 109.....	465,658.34	5,516.85	471,175.19
" " 111.....	248,683.72	8,264.09	256,947.81
" " 121.....	813,386.69	62,773.85	876,160.54
" " 500.....	299,396.76	87,889.97	387,286.73
" " 519.....	96,943.23	75,465.70	172,408.93
" " 530.....	314.05	32,847.68	33,161.73
Bicroft Mine Road.....	410.15	.....	410.15
Miscellaneous Surveys.....	3,315.30	.....	3,315.30
Development Roads:			
Fletcher Lake Road.....	11,390.16	.....	11,390.16
Highland Grove-Kidd's Corners.....	275.28	.....	275.28
Kushog Lake Road.....	23,080.19	.....	23,080.19
Horseshoe Lake Road.....	29,359.98	.....	29,359.98
Gooderham-Haliburton.....	14,713.34	.....	14,713.34
	\$2,035,680.81	\$ 361,760.46	\$2,397,441.27
Kenora:			
Highway No. 17.....	\$4,153,148.39	\$ 389,674.42	\$4,542,822.81
" " 70.....	29,608.98	98,018.78	127,627.76
" " 72.....	71,821.91	68,398.39	140,220.30
" " 105.....	248,746.23	271,325.51	520,071.74
" " 116.....	8,174.02	37,630.61	45,804.63
" " 119.....	1,734.36	53,281.70	55,016.06
" " 125.....	2,549.86	37,697.84	40,247.70
" " 128.....	392.91	39,568.54	39,961.45
" " 594.....	20,559.35	23,134.11	43,693.46
" " 596.....	21,276.52	20,240.90	41,517.42
" " 598.....	.....	6,132.06	6,132.06
" " 599.....	37,189.59	26,948.32	64,137.91
" " 601.....	232.11	23,728.68	23,960.79
" " 603.....	2,774.14	5,148.23	7,922.37
" " 604.....	.....	18,728.16	18,728.16
" " 605.....	.....	13,586.23	13,586.23
" " 609.....	13,333.96	5,587.57	18,921.53
" " 618.....	.....	18,783.56	18,783.56
Miscellaneous Surveys.....	647.30	.....	647.30
Connecting Link:			
Town of Kenora.....	.....	185.11	185.11
Unincorporated Townships:			
Aubrey East.....	.....	544.18	544.18
Boys.....	.....	529.82	529.82
Bradshaw.....	.....	40.00	40.00
Britton.....	9,505.89	1,938.42	11,444.31
Colenso.....	.....	337.53	337.53

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Devonshire.....	\$	\$ 729.93	\$ 729.93
Drayton.....	.....	1,460.58	1,460.58
Drayton Reserve.....	.....	391.25	391.25
Eton.....	4,092.35	2,329.63	6,421.98
Ewart.....	18,123.61	181.13	18,304.74
Gidley.....	.....	94.23	94.23
Indian Reserve No. 39A.....	.....	181.12	181.12
Kirkup.....	.....	214.73	214.73
Melgund.....	5,041.86	4,349.37	9,391.23
Mutrie.....	2,956.98	2,893.46	5,850.44
North of Buller.....	.....	305.00	305.00
North of Drayton.....	.....	7.00	7.00
Pellatt.....	2,615.52	3,483.15	6,098.67
Redditt.....	1,732.78	2,303.12	4,035.90
Redvers.....	1,972.96	780.55	2,753.51
Rowell.....	.....	975.58	975.58
Rugby.....	.....	4,585.77	4,585.77
Smellie.....	.....	11.90	11.90
South of Aubrey.....	.....	1,094.62	1,094.62
South of Pellatt.....	.....	3,497.03	3,497.03
South Worth.....	3.00	477.27	480.27
Van Horne.....	.....	3,154.78	3,154.78
Vermilion Additional .....	.....	1,777.01	1,777.01
Wabigoon.....	1,972.96	780.56	2,753.52
Wainwright.....	.....	2,468.69	2,468.69
West of Redditt.....	.....	812.02	812.02
Zealand.....	10,126.94	7,014.14	17,141.08
Development Road:			
Anderson Loop.....	6,555.96	.....	6,555.96
	\$4,676,890.44	\$1,207,542.29	\$5,884,432.73
Muskoka:			
Highway No. 11.....	\$ 525,960.91	\$ 131,868.61	\$ 657,829.52
" " 35.....	28,013.30	10,145.53	38,158.83
" " 60.....	9,195.90	22,746.72	31,942.62
" " 69.....	10,040.62	44,240.64	54,281.26
" " 103.....	305,363.33	32,623.12	337,986.45
" " 118.....	389,571.77	113,848.33	503,420.10
" " 400.....	23,104.56	.....	23,104.56
" " 501.....	45,875.64	27,933.78	73,809.42
" " 514.....	50,018.95	25,159.28	75,178.23
" " 516.....	61,947.01	17,972.59	79,919.60
" " 525.....	.....	1,301.87	1,301.87
" " 527.....	42,630.41	14,048.59	56,679.00
" " 532.....	246,335.77	30,390.04	276,725.81
Miscellaneous Surveys.....	94.72	.....	94.72
Connecting Links:			
Town of Bracebridge.....	.....	2,260.95	2,260.95
Town of Gravenhurst.....	.....	4,434.92	4,434.92
Town of Huntsville.....	.....	9,738.59	9,738.59
Village of Port Carling.....	.....	3,726.66	3,726.66
Unincorporated Townships:			
Baxter.....	.....	10,456.99	10,456.99
Gibson North.....	.....	282.23	282.23
Gibson South.....	.....	775.19	775.19
Sinclair.....	.....	2,442.81	2,442.81
Development Roads:			
Rosseau-Huntsville Road.....	49,406.79	.....	49,406.79
Brackinrig Road.....	25,703.85	.....	25,703.85
Port Cunningham Road.....	15,604.99	.....	15,604.99
	\$1,828,868.52	\$ 506,397.44	\$2,335,265.96

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing:			
Highway No. 11.....	\$ 246,124.11	\$ 164,433.14	\$ 410,557.25
" " 17.....	1,411,729.40	176,931.97	1,588,661.37
" " 60.....	28,180.66	143,195.04	171,375.70
" " 63.....	10,925.95	68,888.21	79,814.16
" " 64.....	77,420.41	140,795.28	218,215.69
" " 94.....	.....	15,939.79	15,939.79
" " 127.....	107,138.36	24,904.52	132,042.88
" " 514.....	4,779.44	.....	4,779.44
" " 523.....	.....	25,951.08	25,951.08
" " 528.....	.....	2,388.24	2,388.24
" " 531.....	.....	5,145.88	5,145.88
" " 533.....	31,153.62	25,569.30	56,722.92
" " 539.....	1,927.43	38,559.54	40,486.97
" " 539A.....	163.36	987.72	1,151.08
North Bay Airport Road.....	.....	11,510.59	11,510.59
Connecting Link:			
Town of Sturgeon Falls.....	.....	2,860.74	2,860.74
Unincorporated Townships:			
Airy.....	1,127.49	1,712.51	2,840.00
Dickens.....	660.00	719.87	1,379.87
Lyll.....	.....	51.75	51.75
Murchison.....	.....	3,793.94	3,793.94
Sabine.....	.....	216.75	216.75
Badgerow.....	7,697.49	5,616.96	13,314.45
Bastedo.....	721.16	600.14	1,321.30
Boulter.....	.....	25.75	25.75
Clement.....	.....	602.17	602.17
Crerar.....	.....	5,965.39	5,965.39
Dana.....	.....	602.17	602.17
Falconer.....	4,895.46	2,898.09	7,793.55
Gibbons.....	2,015.90	1,964.93	3,980.83
Gladman.....	.....	49.00	49.00
Grant.....	.....	2,830.72	2,830.72
Hugel.....	3,058.97	5,423.38	8,482.35
Kirkpatrick.....	5,650.64	9,750.91	15,401.55
Lauder.....	4,908.76	1,276.39	6,185.15
London.....	.....	72.30	72.30
MacPherson.....	4,723.33	7,933.03	12,656.36
Pardo.....	.....	120.43	120.43
Pentland.....	258.36	67.18	325.54
Phelps.....	3,307.17	6,741.76	10,048.93
Poitras.....	.....	14.21	14.21
Thistle.....	.....	611.72	611.72
Wyse.....	.....	127.90	127.90
Best.....	.....	595.40	595.40
Development Roads:			
Booth Track Road.....	13,092.12	.....	13,092.12
Concession 16, Chisholm Township.....	.....	16,779.26	16,779.26
Birch's Road.....	44,962.80	.....	44,962.80
Kiosk Road.....	48,424.60	.....	48,424.60
O'Brien Street-Airport.....	16,390.38	.....	16,390.38
Wasi Road-Astorville.....	Cr. 37.86	.....	Cr. 37.86
	\$2,081,399.51	\$ 925,225.05	\$3,006,624.56
Parry Sound:			
Highway No. 11.....	\$1,344,329.75	\$ 105,679.49	\$1,450,009.24
" " 69.....	2,356,234.61	117,418.18	2,473,652.79
" " 94.....	32.11	1,398.29	1,430.40
" " 124.....	414,176.93	112,215.64	526,392.57
" " 510.....	.....	3,457.44	3,457.44
" " 518.....	32,060.62	90,282.73	122,343.35
" " 520.....	.....	76,520.12	76,520.12
" " 522.....	181,786.86	38,051.34	219,838.20
" " 524.....	.....	79,801.77	79,801.77
" " 526.....	.....	5,099.45	5,099.45

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Highway No. 529.....	\$ 197,725.50	\$ 4,652.31	\$ 4,652.31
" " 532.....	17,006.98	37,429.84	235,155.34
" " 534.....		43,143.26	60,150.24
Sidewalks:			
Village of Sprucedale.....	605.18		605.18
Connecting Link:			
Town of Parry Sound.....		1,666.89	1,666.89
Unincorporated Townships:			
Bethune.....	3,147.87	3,049.63	6,197.50
Burpee.....	2,445.62	1,926.75	4,372.37
Conger.....	1,987.49	3,561.62	5,549.11
Croft.....	5,223.81	5,231.80	10,455.61
Ferguson.....	4,423.41	3,823.24	8,246.65
Ferrie.....		35.00	35.00
Gurd.....	6,719.63	6,050.59	12,770.22
Hardy.....	6,396.31	3,669.59	10,065.90
Harrison.....	5,464.90	895.32	6,360.22
Henvey.....		61.36	61.36
Laurier.....	7,996.29	4,023.01	12,019.30
Lount.....	3,991.89	4,747.14	8,739.03
McConkey.....	2,482.34	2,513.01	4,995.35
McKenzie.....	2,445.63	1,926.76	4,372.39
Mills.....	6,396.29	3,669.59	10,065.88
Monteith.....	3,922.19	5,338.99	9,261.18
Mowat.....		623.12	623.12
Patterson.....	3,993.97	4,844.49	8,838.46
Pringle.....	3,957.31	5,549.33	9,506.64
Proudfoot.....	4,125.36	4,512.25	8,637.61
Spence.....	2,998.05	2,415.56	5,413.61
Wallbridge.....	10,855.36	1,379.90	12,235.26
Wilson.....	2,482.33	2,513.01	4,995.34
Development Roads:			
Dillon Cove Road.....	21,235.57		21,235.57
Bernard Lake Road.....	2,449.32		2,449.32
Fifth Line, Nipissing Township.....	49,828.87		49,828.87
Booth Track Road.....	52,368.48		52,368.48
Old Nipissing Road.....	4,497.20		4,497.20
Concession 12/13,			
South Himsworth Township.....	25,611.04		25,611.04
Balsam Lake Road.....	10,532.28		10,532.28
McDougall Road.....	36,791.64		36,791.64
Rose Point Road.....	48,130.27		48,130.27
Doe Lake Road.....	11,221.58		11,221.58
Sideroad 2/3, Concession 2/3,			
McMurrick Township.....	6,839.84		6,839.84
	\$4,904,920.68	\$ 789,177.81	\$5,694,098.49
Rainy River:			
Highway No. 70.....	\$ 1,195.83	\$ 47,634.47	\$ 48,830.30
" " 71.....	479,795.37	60,332.65	540,128.02
" " 120.....	2,655,185.60	54,757.11	2,709,942.71
" " 592.....	75.00	4,299.54	4,374.54
" " 600.....	2,684.79	36,686.55	39,371.34
" " 602.....	22,536.25	26,238.59	48,774.84
" " 611.....	7,702.75	15,626.33	23,329.08
" " 613.....		44,925.99	44,925.99
" " 615.....	30,645.13	29,682.22	60,327.35
" " 617.....		19,919.80	19,919.80
" " 619.....		40,312.69	40,312.69
" " 621.....	137,755.87	47,328.69	185,084.56
" " 622.....		9,893.58	9,893.58
" " 623.....		21,809.87	21,809.87
" " 633.....	1,877.91		1,877.91
Miscellaneous Surveys.....	11,820.73		11,820.73

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Rainy River (Cont'd):			
Connecting Links:			
Town of Fort Frances.....	\$	\$ 79.49	\$ 79.49
Town of Rainy River.....	.....	408.89	408.89
Unincorporated Townships:			
Dance.....	.....	1,389.77	1,389.77
Dewart.....	1,240.40	4,055.82	5,295.22
Indian Reserve No. 18B.....	.....	99.64	99.64
Miscampbell.....	.....	1,550.76	1,550.76
Nelles.....	.....	3,354.20	3,354.20
North of Fleming.....	.....	24.50	24.50
Sifton.....	.....	5,778.87	5,778.87
Spohn.....	.....	2,254.32	2,254.32
Sutherland.....	.....	4,208.08	4,208.08
Development Roads:			
O'Brien Street, Steep Rock Road.....	25,889.49	.....	25,889.49
Shenson-Dobie.....	18,231.99	.....	18,231.99
	\$3,396,637.11	\$ 482,652.42	\$3,879,289.53
Sudbury:			
Highway No. 17.....	\$ 217,480.66	\$ 214,999.79	\$ 432,480.45
" 64.....	10,869.93	49,145.86	60,015.79
" 68.....	1,317,707.20	63,036.52	1,380,743.72
" 69.....	116,991.39	81,480.77	198,472.16
" 101.....	16,066.93	.....	16,066.93
" 129.....	167,571.45	86,421.56	253,993.01
" 528.....	.....	16,476.80	16,476.80
" 528A.....	.....	7,812.03	7,812.03
" 535.....	149,699.60	50,538.59	200,238.19
" 536.....	1,057.11	Cr. 1,055.36	1.75
" 537.....	1,035.83	26,560.82	27,596.65
" 539.....	1,387.47	9,813.15	11,200.62
" 541.....	179,237.13	18,623.77	197,860.90
" 543.....	18,605.04	17,757.60	36,362.64
" 544.....	344,443.92	102,904.40	447,348.32
" 545.....	49,297.59	38,134.60	87,432.19
" 547.....	388.00	5,133.75	5,521.75
" 549.....	14,648.51	23,666.75	38,315.26
" 553.....	2,182.98	6,916.74	9,099.72
" 560.....	54,539.93	85,597.66	140,137.59
" 606.....	28,489.88	2,367.01	30,856.89
" 607.....	.....	31,249.15	31,249.15
" 607A.....	.....	2,095.35	2,095.35
" 616.....	4,345.30	35,828.38	40,173.68
" 624.....	20,051.70	2,937.29	22,988.99
Burwash Killarney.....	179,396.47	.....	179,396.47
Chapleau-Foleyet.....	797.00	.....	797.00
Miscellaneous Surveys.....	114,564.24	.....	114,564.24
Sidewalks:			
Village of Noelville.....	658.58	.....	658.58
Village of Garson.....	936.13	.....	936.13
Connecting Link:			
Town of Capreol.....	.....	19,973.28	19,973.28
Unincorporated Townships:			
Afton.....	.....	240.87	240.87
Allen.....	.....	876.22	876.22
Bigwood.....	6,208.09	8,615.49	14,823.58
Cherriman.....	.....	140.96	140.96
Davis.....	.....	250.43	250.43
Delamere.....	2,985.39	3,020.19	6,005.58
Hoskin.....	.....	916.94	916.94
Haddo.....	.....	220.92	220.92
Henry.....	.....	1,140.32	1,140.32
Janes.....	5,782.23	510.43	6,292.66
McNish.....	.....	602.17	602.17
Scollard.....	.....	1,869.70	1,869.70

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Noble.....	\$ 1,682.64	\$	\$ 1,682.64
Togo.....	1,682.65	.....	1,682.65
Awrey.....	.....	221.06	221.06
Broder.....	14,034.34	6,110.28	20,144.62
Burwash.....	.....	3,359.58	3,359.58
Cartier.....	.....	1,037.88	1,037.88
Cleland.....	.....	3,299.42	3,299.42
Dill.....	1,299.70	2,495.15	3,794.85
Dryden.....	.....	2,289.27	2,289.27
Eden.....	.....	316.92	316.92
Ermatinger.....	.....	259.35	259.35
Fairbank.....	.....	1,481.20	1,481.20
Foster.....	.....	2,016.95	2,016.95
Hawley.....	.....	107.13	107.13
Hendrie.....	.....	39.83	39.83
Hess.....	.....	153.58	153.58
Lorne.....	.....	4,958.80	4,958.80
Loughrin.....	.....	2,414.49	2,414.49
Louise.....	.....	3,449.79	3,449.79
MacLennan.....	.....	3,739.48	3,739.48
Merritt.....	.....	1,812.22	1,812.22
Moncrief.....	.....	51.19	51.19
Mongowin.....	.....	1,465.88	1,465.88
Rathbun.....	.....	218.88	218.88
Scadding.....	.....	1,481.63	1,481.63
Secord.....	1,299.71	1,165.74	2,465.45
Snider.....	.....	130.76	130.76
Street.....	.....	1,408.67	1,408.67
Tilton.....	.....	656.48	656.48
Township 107.....	.....	86.45	86.45
Truman.....	.....	181.57	181.57
Wisner.....	.....	350.00	350.00
Gallagher.....	125.00	.....	125.00
McKinnon.....	4,181.20	583.02	4,764.22
Shakespeare.....	4,142.23	3,954.91	8,097.14
Development Roads:			
Bancroft Drive.....	44,903.17	.....	44,903.17
Long Lake Road.....	.....	11,000.00	11,000.00
Warren-St. Charles.....	.....	5,984.55	5,984.55
Spanish River Bridge.....	20,315.57	.....	20,315.57
La Salle Blvd.....	149,179.71	.....	149,179.71
Concession 3, Hallam Township.....	10,393.67	.....	10,393.67
	\$3,280,665.27	\$1,085,103.01	\$4,365,768.28
Temiskaming:			
Highway No. 11.....	\$ 912,461.36	\$ 190,269.66	\$1,102,731.02
" " 65.....	376,397.29	120,332.60	496,729.89
" " 66.....	902,267.20	94,540.23	996,807.43
" " 101.....	26,220.81	4,613.16	30,833.97
" " 112.....	200.76	12,686.76	12,887.52
" " 558.....	8,481.47	28,039.10	36,520.57
" " 560.....	12,285.99	140,130.01	152,416.00
" " 562.....	.....	17,666.64	17,666.64
" " 564.....	.....	11,506.78	11,506.78
" " 566.....	.....	25,206.01	25,206.01
" " 567.....	8,117.56	35,163.07	43,280.63
" " 568.....	.....	1,738.60	1,738.60
" " 569.....	3,000.00	39,941.49	42,941.49
" " 570.....	.....	4,520.33	4,520.33
" " 571.....	9,597.93	5,449.90	15,047.83
" " 573.....	4,611.82	22,063.29	26,675.11
" " 616.....	10,793.76	12,279.94	23,073.70
Miscellaneous Surveys.....	95.58	.....	95.58
Sidewalks:			
Town of Cobalt.....	1,400.00	.....	1,400.00

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming (Cont'd):			
Connecting Links:			
Town of Cobalt.....	\$	\$ 4,935.57	\$ 4,935.57
Town of Haileybury.....	.....	1,770.08	1,770.08
Town of New Liskeard.....	.....	6,028.14	6,028.14
Township of Teck.....	.....	246.52	246.52
Unincorporated Townships:			
Argyle.....	.....	100.00	100.00
Barber.....	.....	570.60	570.60
Bayly.....	.....	1,251.44	1,251.44
Beauchamp.....	1,319.82	13,459.92	14,779.74
Benoit.....	3,028.14	1,518.70	4,546.84
Blair.....	.....	1,786.43	1,786.43
Bryce.....	.....	1,658.42	1,658.42
Cane.....	.....	3,467.70	3,467.70
Catherine.....	9,000.00	2,766.00	11,766.00
Corkhill.....	.....	356.65	356.65
Eby.....	.....	2,169.42	2,169.42
Firstbrook.....	.....	1,306.95	1,306.95
Gillies.....	.....	552.59	552.59
Grenfell.....	.....	2,270.34	2,270.34
Henwood.....	3,172.34	7,758.03	10,930.37
Ingram.....	.....	5,737.06	5,737.06
Keefer.....	.....	2,219.17	2,219.17
Lawson.....	.....	356.66	356.66
Lebel.....	.....	1,181.70	1,181.70
Lorrain.....	300.00	96.34	396.34
Maisonville.....	3,028.13	1,518.71	4,546.84
Marquis.....	.....	8,575.11	8,575.11
Marter.....	9,310.29	6,890.76	16,201.05
McEvoy.....	.....	52.77	52.77
McFadden.....	.....	381.50	381.50
Nicol.....	.....	40.62	40.62
Ossian.....	.....	1,397.80	1,397.80
Otto.....	.....	4,004.63	4,004.63
Pacaud.....	.....	5,200.95	5,200.95
Pense.....	.....	2,504.14	2,504.14
Robillard.....	1,980.25	8,042.76	10,023.01
Savard.....	11,045.19	4,238.60	15,283.79
Sharpe.....	.....	3,315.50	3,315.50
Tudhope.....	.....	861.23	861.23
Milner.....	.....	40.63	40.63
Development Roads:			
Martin Bird-Larder Lake-Englehart.....	50,000.00	.....	50,000.00
Sideroad 6/7, Evanturel Township.....	5,746.25	.....	5,746.25
Chamberlain-Pacaud.....	.....	3,956.41	3,956.41
Station Road.....	19,997.43	.....	19,997.43
Hamlet-Earlington West.....	23,389.53	.....	23,389.53
	\$2,417,248.90	\$ 880,734.12	\$3,297,983.02
Thunder Bay:			
Highway No. 11.....	\$ 63,104.51	\$ 162,298.20	\$ 225,402.71
" " 17.....	9,161,833.30	492,313.44	9,654,146.74
" " 17A.....	2,170.47	60,865.75	63,036.22
" " 61.....	16,580.91	52,053.69	68,634.60
" " 120.....	44,912.11	64,033.76	108,945.87
" " 130.....	100,474.73	84,137.81	184,612.54
" " 580.....	19,261.64	4,805.33	24,066.97
" " 582.....	12,171.91	3,741.02	15,912.93
" " 584.....	45,881.27	42,230.53	88,111.80
" " 585.....	4,215.15	49,062.86	53,278.01
" " 586.....	7,356.95	1,436.47	8,793.42
" " 587.....	11,896.05	58,728.70	70,624.75
" " 588.....	16,699.61	48,800.06	65,499.67
" " 589.....	1,843.03	34,396.70	36,239.73
" " 590.....	13,063.58	62,467.49	75,531.07

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Highway No. 591.....	\$ 3,819.97	\$ 8,275.74	\$ 12,095.71
" " 593.....	3,244.88	19,463.88	22,708.76
" " 595.....	140.66	43,606.51	43,747.17
" " 597.....	.....	8,032.57	8,032.57
" " 599.....	8,262.18	46,875.93	55,138.11
" " 608.....	10.47	6,991.79	7,002.26
" " 614.....	663,647.72	64,519.85	728,167.57
" " 625.....	24,672.15	17,109.10	41,781.25
" " 627.....	16,223.95	3,630.06	19,854.01
Geraldton Cut-off.....	19,293.50	2,310.46	21,603.96
Miscellaneous Surveys.....	2,136.69	.....	2,136.69
Connecting Links:			
City of Fort William.....	61,575.01	.....	61,575.01
Town of Geraldton.....	.....	998.27	998.27
City of Port Arthur.....	18,881.58	.....	18,881.58
Unincorporated Townships:			
Armstrong.....	.....	1,013.36	1,013.36
Dawson Road Lots.....	1,627.95	4,288.37	5,916.32
Devon.....	3,106.85	3,286.94	6,393.79
Forbes.....	2,473.70	4,768.28	7,241.98
Fowler.....	.....	3,774.70	3,774.70
Goldie.....	976.80	1,890.15	2,866.95
Gorham.....	5,449.61	4,871.06	10,320.67
Hardwick.....	.....	2,150.97	2,150.97
Jacques.....	1,168.49	2,337.41	3,505.90
Jackfish.....	493.25	659.32	1,152.57
Kilkenny.....	997.20	983.46	1,980.66
Ledue.....	.....	49.56	49.56
Lybster.....	2,500.00	3,922.97	6,422.97
Lyons.....	846.25	2,362.05	3,208.30
Marks.....	1,667.09	3,038.51	4,705.60
McTavish W.....	.....	171.84	171.84
North of Hagey.....	.....	603.81	603.81
Pearson.....	5,410.88	4,456.02	9,866.90
Rossport.....	600.00	1,061.61	1,661.61
Scoble.....	4,300.00	5,583.78	9,883.78
Sibley.....	1,400.00	5,981.96	7,381.96
South and East of Amos.....	.....	118.75	118.75
Stirling.....	11,588.39	1,303.87	12,892.26
Strange.....	1,194.91	2,450.81	3,645.72
Township 85.....	.....	45.63	45.63
Upsala.....	1,392.34	2,931.18	4,323.52
Ware.....	4,394.81	7,051.40	11,446.21
Development Roads:			
Mountain Road.....	7,101.81	.....	7,101.81
Sturgeon Bay Road.....	6,602.88	.....	6,602.88
John Street, Oliver Township.....	14,774.80	.....	14,774.80
John Street, McIntyre Township.....	3,180.13	.....	3,180.13
Concession 3/4 — Flint.....	6,882.04	.....	6,882.04
Loon Lake Road.....	8,031.56	.....	8,031.56
Pine Bay Road.....	.....	6,899.60	6,899.60
Hilldale Road.....	53,331.95	.....	53,331.95
River Road.....	27,506.43	.....	27,506.43
Oliver Lake Road.....	22,572.73	.....	22,572.73
Twin Lakes Road.....	.....	9,498.78	9,498.78
	\$10,544,946.83	\$1,530,742.12	\$12,075,688.95
COUNTY AND DISTRICT TOTALS	\$143,703,365.89	\$29,147,524.94	\$172,850,890.83
Sundry Unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.	\$3,232,422.36	\$9,495,315.41	\$12,727,737.77
TOTAL EXPENDITURES	\$146,935,788.25	\$38,642,840.35	\$185,578,628.60

APPENDIX No. 2
DEPARTMENT EXPENDITURES BY HIGHWAYS
 April 1st, 1959 to March 31st, 1960

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
King's Highways					
2	Windsor-Quebec Boundary.....	542.2	\$2,012,340.29	\$1,892,676.14	\$3,905,016.43
3	Windsor-Fort Erie.....	260.0	1,885,890.57	554,895.91	2,440,786.48
3A	Chambers Corners-Niagara Falls.....	24.8	1,636.89	26,423.43	28,060.32
3B	Jct. Hwy. No. 3-Windsor.....	6.0	139,175.12	6,078.91	145,254.03
3C	Ridgeway-Fort Erie.....	7.5	685.11	25,481.47	26,166.58
4	Port Stanley-Flesherton.....	156.3	328,930.10	363,166.96	692,097.06
5	Toronto-Paris.....	64.5	1,013,929.75	251,897.63	1,265,827.38
6	Port Dover-Tobermory.....	224.1	1,366,149.43	578,498.01	1,944,647.44
7	Sarnia-Perth.....	407.6	2,596,763.76	1,285,873.55	3,882,637.31
7A	Manchester-Jct. Hwy. No. 115	31.9	340,301.64	80,940.03	421,241.67
8	Niagara Falls-Goderich.....	154.7	1,109,210.32	287,810.45	1,397,020.77
8A	St. Davids-Queenston.....	2.6	1,549.79	8,057.95	9,607.74
9	Schomberg-Kincardine.....	114.6	122,572.31	263,155.59	385,727.90
10	Port Credit-Owen Sound.....	105.0	769,759.32	319,305.96	1,089,065.28
11	Toronto-Nipigon.....	851.0	10,516,492.89	1,360,680.40	11,877,173.29
12	Whitby-Midland and Penetang.....	99.1	495,340.46	206,977.91	702,318.37
14	Pictou-Marmora.....	51.4	542,852.75	124,052.09	666,904.84
15	Ottawa-Kingston.....	131.0	1,393,206.72	249,001.34	1,642,208.06
16	Ottawa-Johnstown Corners.....	58.9	43,827.09	101,992.42	145,819.51
17	Quebec Boundary-Manitoba Boundary.....	1,208.6	26,218,936.02	2,295,291.61	28,514,227.63
17A	Port Arthur-Jct. Hwy. No. 17	21.0	2,170.47	60,865.75	63,036.22
18	Leamington-Windsor.....	49.2	106,768.33	98,957.64	205,725.97
18A	Kingsville-Jct. Hwy. No. 18....	20.0	6,077.55	19,783.87	25,861.42
19	Port Burwell-Tralee.....	92.2	1,559,853.21	160,369.48	1,720,222.69
20	Niagara Falls-Burlington.....	53.3	438,595.34	162,276.61	600,871.95
21	Morpeth-Owen Sound.....	207.0	864,029.15	730,075.42	1,594,104.57
22	London-Sarnia.....	61.5	648,545.38	27,592.59	676,137.97
23	Elginfield-Teviotdale.....	60.6	153,375.70	155,736.53	309,112.23
24	Port Dover-Collingwood.....	142.7	365,501.30	252,670.73	618,172.03
24A	Paris-Galt.....	13.1	47,231.51	47,231.51	47,231.51
25	Queen Elizabeth Way-Acton....	27.3	52,416.10	84,476.03	136,892.13
26	Barrie-Owen Sound.....	74.6	32,985.86	138,117.60	171,103.46
27	Long Branch-Penetang- Midland.....	91.8	491,460.41	369,390.37	860,850.78
28	Port Hope-Bancroft.....	95.9	710,338.02	182,821.53	893,159.55
29	Brockville-Arnprior.....	76.4	470,979.01	113,653.73	584,632.74
30	Brighton-Havelock.....	32.0	3,453.41	73,792.17	77,245.58
31	Morrisburg-Ottawa.....	48.4	30,242.75	100,351.52	130,594.27
32	Gananoque-Jct. Hwy. No. 15....	12.4	15,687.85	26,764.71	42,452.56
33	Kingston-Stirling.....	87.4	442,703.52	183,819.70	626,523.22
34	Lancaster-Hawkesbury.....	38.1	3,886.59	219,816.09	223,702.68
35	Newcastle-Huntsville.....	136.1	63,303.82	264,134.62	327,438.44
35A	Jct. Hwy. No. 35-Fenelon Falls.....	2.2	674.28	42,594.50	43,268.78
36	Jct. Hwy. No. 7-Burleigh Falls.....	47.3	95,938.93	90,545.53	186,484.46
37	Belleville-Actinolite.....	29.3	279,526.75	64,187.85	343,714.60
38	Cataqui-Jct. Hwy. No. 7.....	43.8	539,861.58	103,461.47	643,323.05
39	Windsor-Belle River.....	20.9	390,364.30	24,072.63	414,436.93
40	Sarnia-Chatham.....	50.1	1,322,569.79	68,557.30	1,391,127.09
41	Pictou-Napanee-Pembroke.....	145.1	801,069.74	175,311.96	976,381.70
42	Forthton-Westport.....	34.0	912.12	94,798.65	95,710.77
43	Alexandria-Jct. Hwy. No. 31....	38.7	279,436.61	62,025.54	341,462.15
44	Almonte-Jct. Hwy. No. 17.....	12.8	353.34	24,367.75	24,721.09
45	Cobourg-Norwood.....	33.0	206,717.05	85,572.77	292,289.82
46	Jct. Hwy. No. 7-Coboconk.....	34.0	119,813.24	43,811.48	163,624.72
47	Jct. Hwy. No. 12-Uxbridge- Jct. Hwy. No. 48.....	20.5	15,030.54	127,615.18	142,645.72

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
48	Jct. Hwy. No. 41-Beaverton.....	51.2	\$ 585,333.23	\$ 230,704.79	\$ 816,038.02
49	Kleinberg-Jct. Hwy. No. 50....	3.5	48,567.21	15,854.52	64,421.73
50	Jct. Hwy. No. 7-Bolton-Jct. Hwy. No. 9.....	18.0	13,354.21	76,716.08	90,070.29
51	Jct. Hwy. No. 24-Caledon.....	2.5	258,733.33	5,196.90	263,930.23
52	Wentworth County Line-Jct. Hwy. No. 2.....	18.5	4,568.58	46,735.02	51,303.60
53	Eastwood-Jct. Hwy. No. 20....	48.9	656,325.47	105,518.63	761,844.10
54	Cainsville-Cayuga.....	27.0	239,909.41	81,881.60	321,791.01
55	Jct. Hwy. No. 53-Hamilton....	4.0	242,839.69	6,293.78	249,133.47
56	Jct. Hwy. No. 53 and 20- Canfield.....	15.5	6,127.06	37,940.03	44,067.09
57	Bismarck-Jct. Hwy. No. 3A....	9.0	2,149.24	19,914.89	22,064.13
58	St. Catharines-Port Colborne..	24.0	83,013.86	59,686.60	142,700.46
59	Woodstock-Delhi.....	27.7	1,307.03	43,199.30	44,506.33
60	Huntsville-Eganville.....	132.7	282,535.97	245,893.79	528,429.76
61	Port William-International Boundary.....	42.9	16,580.91	52,053.69	68,634.60
62	Madoc-Pembroke.....	118.0	616,163.06	168,072.43	784,235.49
63	North Bay-Temiskaming.....	41.0	10,925.95	68,888.21	79,814.16
64	Jct. Hwy. No. 69-Marten River.....	91.9	88,290.34	189,941.14	278,231.48
65	Matachewan-New Liskeard- Quebec Boundary.....	80.7	376,397.29	120,332.60	496,729.89
66	Matachewan-Kirkland Lake- Quebec Boundary.....	65.6	902,267.20	94,540.23	996,807.43
67	Iroquois Falls-Jct. Hwy. No. 101.....	23.3	11,910.16	35,548.38	47,458.54
68	South Baymouth-Jct. Hwy. No. 17.....	78.3	1,439,725.36	382,725.19	1,822,450.55
69	Brechin-Capreol.....	197.4	2,483,678.21	289,910.48	2,773,588.69
70	Longbow Corners-Jct. Hwy. No. 71.....	96.8	30,804.81	145,653.25	176,458.06
71	Fort Frances-Rainy River.....	57.0	479,795.37	60,332.65	540,128.02
72	Dinorwic-Sioux Lookout.....	42.5	71,821.91	68,398.39	140,220.30
73	Port Bruce-Dorchester Road..	24.1	.....	33,658.06	33,658.06
74	New Sarum-Nilestown.....	14.0	8,084.38	32,996.06	41,080.44
75	Wallacetown-Dutton.....	2.5	29,086.55	4,598.15	33,684.70
76	Eagle-Jct. Hwy. No. 2.....	11.4	30,928.68	23,697.98	54,626.66
77	New Glasgow-Rodney.....	4.0	36,186.25	5,768.65	41,954.90
78	Wallaceburg-Dresden.....	10.5	381.47	8,823.18	9,204.65
79	Jct. Hwy. No. 2-Jct. Hwy. No. 7.....	28.9	4,769.62	52,478.57	57,248.19
80	Jct. Hwy. No. 2-Alvinston.....	13.0	201,279.35	17,166.36	218,445.71
81	Delaware-Grand Bend.....	44.8	211,177.39	80,840.64	292,018.03
82	Jct. Hwy. No. 7-Port Franks..	7.0	544.35	6,568.09	7,112.44
83	Brewster-Russeldale.....	24.0	540.03	36,542.23	37,082.26
84	St. Joseph-Hensall.....	10.5	115.62	14,776.90	14,892.52
85	Kitchener-Elmira.....	12.0	32.01	84,896.10	84,928.11
86	Amberley-Jct. Hwy. No. 7.....	81.8	276,765.69	245,473.72	522,239.41
87	Bluevale-Harriston.....	19.5	7,551.81	40,303.73	47,855.54
88	Bondhead-Bradford.....	6.0	1,317.51	23,938.26	25,255.77
89	Primrose-Cookstown.....	23.5	19,801.68	54,291.03	74,092.71
90	Angus-Barrie.....	12.6	76,309.82	30,017.87	106,327.69
91	Duntroon-Stayner.....	5.2	100.00	21,794.56	21,894.56
92	Elmvale-Wasaga Beach.....	9.0	41,694.78	22,505.48	64,200.26
93	Crown Hill-Waverley.....	17.5	77,970.22	61,172.50	139,142.72
94	Callander-Jct. Hwy. No. 17....	6.5	32.11	17,338.08	17,370.19
95	Wolfe Island Road.....	7.0	4,982.74	21,001.30	25,984.04
96	Wolfe Island Road.....	20.0	47,200.90	57,189.86	104,390.76
97	Hickson-Freelton.....	43.1	376,731.19	120,299.29	497,030.48
98	Windsor-Blenheim.....	60.1	509,209.03	67,357.05	576,566.08
99	Dundas-Jct. Hwy. No. 24.....	16.5	27,384.09	53,512.55	80,896.64
100	Thamesford-Jct. Hwy. No. 7..	16.0	248,811.61	88,281.07	337,092.68
101	Warren Lake-Quebec Boundary.....	114.6	198,964.50	155,543.30	354,507.80

Highway No.	Location	Mileage	Construction	Maintenance	Total
102	Jct. Hwy. No. 2-Dundas.....	2.2	\$ 2,428.99	\$ 10,736.68	\$ 13,165.67
103	Waubashene-Footes Bay.....	29.8	334,873.47	40,341.96	375,215.43
104	Jct. Hwy. No. 9-Grand Valley.....	1.8	224.96	4,421.89	4,646.85
105	Jct. Hwy. No. 17-Red Lake.....	111.9	248,746.23	271,325.51	520,071.74
106	Welcome-Dale.....	2.7	19.58	68,327.22	68,346.80
107	Ruthven-Jct. Hwy. No. 18.....	1.0		1,142.48	1,142.48
108	Jct. Hwy. No. 17-Quirke Lake.....	26.1	1,244,432.41	53,642.51	1,298,074.92
109	Jct. Sec. Hwy. No. 500- Jct. Hwy. No. 28.....	14.4	473,813.38	12,265.69	486,079.07
110	Jct. Hwy. No. 15-Carleton Place.....	1.8		2,188.28	2,188.28
111	Dyno Mines-Jct. Sec. Hwy. No. 500.....	7.8	248,683.72	8,264.09	256,947.81
112	Jct. Hwy. No. 11-Jct Hwy. No. 66.....	12.6	200.76	11,886.76	12,087.52
114	Jct. Hwy. No. 98-Maidstone.....	1.2	298.52	1,201.88	1,500.40
115	Jct. Hwy. No. 35-Jct. Hwy. No. 28.....	16.7	49,118.28	59,006.00	108,124.28
116	Patricia-Hudson.....	10.0	8,174.02	37,630.61	45,804.63
118	Glen Orchard-Dorset.....	53.3	389,571.77	113,848.33	503,420.10
119	Jct. Hwy. No. 17-Richan.....	13.9	1,734.36	53,281.70	55,016.06
120	Jct. Hwy. No. 17-Atikokan.....	87.7	2,700,097.71	118,790.87	2,818,888.58
121	Jct. Hwy. No. 35-Tory Hill.....	67.3	813,386.69	102,441.75	915,828.44
122	Jct. Hwy. No. 2-Queen Elizabeth Way.....	3.7	Cr. 3,319.08	34,018.39	30,699.31
124	Parry Sound-Sundridge.....	52.4	414,176.93	112,215.64	526,392.57
125	Jct. Hwy. No. 105-Red Lake Airport.....	7.2	2,549.86	37,697.84	40,247.70
127	Maynooth-Whitney.....	27.5	210,307.62	48,003.26	258,310.88
128	Kenora-Redditt.....	18.9	392.91	39,568.54	39,961.45
129	Thessalon-Chapleau.....	149.2	210,951.86	261,767.83	472,719.69
130	Jct. Hwy. No. 61-Port Arthur.....	20.3	100,474.73	84,137.81	184,612.54
132	Jct. Hwy. No. 41-Renfrew.....	19.5	30,949.13	36,411.59	67,360.72
133	Jct. Hwy. No. 28-Jct. Hwy. No. 7.....	5.4	357,000.60	17,913.29	374,913.89
135	Jct. Hwy. No. 2-Jct. Hwy. No. 401.....	3.8	64,949.29	7,164.24	72,113.53
400	Jct. Hwy. No. 401-Jct. Hwy. No. 11.....	53.2	2,558,283.02	524,003.47	3,082,286.49
401	Windsor-Quebec Border.....	213.8	33,663,657.40	1,502,741.38	35,166,398.78
402	Jct. Hwy. No. 7-Bluewater Bridge.....	3.8	741,235.04	9,119.74	750,354.78
403	Toronto-Woodstock.....		429,937.58		429,937.58
451	Queen Elizabeth Way.....	97.3	5,717,746.49	932,355.09	6,650,101.58

**Total Expenditures Allocated to
King's Highways**

\$123,820,368.84 \$23,514,504.08 \$147,334,872.92

Secondary Highways

500	Bobcaygeon-Kinmount-Bancroft- Herman.....		\$ 423,645.38	\$ 125,126.87	\$ 548,772.25
501	Port Severn-Honey Harbour.....		45,875.64	27,933.78	73,809.42
502	Napanee Marysville.....		154,947.69	13,680.65	168,628.34
503	Kirkfield-Sebright-Norland-Kinmount.....		175,647.60	103,051.01	278,698.61
504	Apsley-Chandos Lake Loop.....		20,158.45	64,119.88	84,278.33
505	Uphill-Jct. Hwy. No. 46.....		190.20	15,832.41	16,022.61
506	Plevna-Jct. Hwy. No. 41.....		37,513.97	47,593.06	85,107.03
507	Gooderham-Jct. Hwy. No. 36.....		4,903.88	35,316.36	40,220.24
508	Burnstown-Black Donald Mine.....		20,923.62	25,992.25	46,915.87
509	Clarendon-Jct. Hwy. No. 7.....		60,362.05	27,157.15	87,519.20
510	Magnetewan-Jct. Hwy. No. 124.....			3,457.44	3,457.44
511	Calabogie-Brightside.....		31,702.61	18,849.02	50,551.63
512	Eganville-Cormac.....		36,195.74	26,663.82	62,859.56
513	Dacre-Hyndford.....		3,953.87	19,057.36	23,011.23
514	Grassmere-Interlaken.....		54,798.39	25,159.28	79,957.67

HIGHWAY No.	LOCATION	CONSTRUCTION	MAINTENANCE	TOTAL
515	Combermere-Quadeville.....	\$ 8,749.05	\$ 22,775.18	\$ 31,524.23
516	Windermere-Jct. Hwy. No. 11.....	61,947.01	17,972.59	79,919.60
517	Combermere-New Carlow.....	26.58	18,916.77	18,943.35
518	Kearney-Jct. Hwy. No. 69.....	32,060.62	90,282.73	122,343.35
519	Haliburton-Red Stone Lake.....	96,943.23	75,465.70	172,408.93
520	Burks Falls-Ardbeg.....	.....	76,520.12	76,520.12
521	Round Lake-Brudenell.....	24,503.42	19,002.63	43,506.05
522	Trout Creek-Loring.....	181,786.86	38,051.34	219,838.20
523	Jct. Hwy. No. 60-Cross Lake.....	.....	25,951.08	25,951.08
524	Jct. Sec. Hwy. 522-Jct. Sec. Hwy. 534.....	.....	79,801.77	79,801.77
525	Gravenhurst-Muskoka Sanitarium.....	.....	1,301.87	1,301.87
526	Jct. Hwy. No. 69-Britt.....	.....	5,099.45	5,099.45
527	Huntsville-Baysville.....	42,630.41	14,048.59	56,679.00
528	Jct. Hwy. No. 64-Wolseley Bay.....	.....	18,865.04	18,865.04
528A	Jct. Sec. Hwy. 528-Pine Cove.....	.....	7,812.03	7,812.03
529	Jct. Hwy. No. 69-Bayfield Wharf.....	.....	4,652.31	4,652.31
530	Carnarvon-West Guilford.....	314.05	32,847.68	33,161.73
531	Bonfield-Jct. Hwy. No. 17.....	.....	5,145.88	5,145.88
532	Bracebridge-Hays Corners.....	444,061.27	67,819.88	511,881.15
533	Mattawa-Jct. Hwy. No. 63.....	31,153.62	25,569.30	56,722.92
534	Powassan-Restoule.....	17,006.98	43,143.26	60,150.24
535	Riviere Venue-Noelville.....	149,699.60	50,538.59	200,238.19
536	Jct. Hwy. No. 17-Creighton Mine.....	1,057.11	Cr. 1,055.36	1.75
537	Wanapitei-Jct. Hwy. No. 69.....	1,035.83	26,560.82	27,596.65
538	Algoma By-pass.....	525.54	6,785.02	7,310.56
539	Warren-Field.....	3,314.90	48,372.69	51,687.59
539A	Jct. Sec. Hwy. 539-River Valley.....	163.36	987.72	1,151.08
540	Little Current-Meldrum Bay.....	56,788.92	217,654.35	274,443.27
541	Jct. Hwy. No. 17-Falconbridge-Skead..	179,237.13	18,623.77	197,860.90
542	Tehkummah-Gore Bay.....	7,649.19	143,303.06	150,952.25
543	Jct. Hwy. No. 69-Long Lake.....	18,605.04	17,757.60	36,362.64
544	Sudbury-Levack-Geneva Lake.....	344,443.92	102,904.40	447,348.32
545	Bailey's Corners-Milnet.....	49,297.59	38,134.60	87,432.19
546	Iron Bridge-Mount Lake.....	10,914.89	77,606.27	88,521.16
547	Sudbury-Frood Mine.....	388.00	5,133.75	5,521.75
548	St. Joseph's Island Road.....	112,800.79	58,937.55	171,738.34
549	Jct. Hwy. No. 17-Lake Panache.....	14,648.51	23,666.75	38,315.26
550	Sault Ste. Marie-Gros Cap.....	53,387.85	20,307.78	73,695.63
551	West Bay-Providence Bay.....	3,911.76	58,728.53	62,640.29
552	Jct. Hwy. No. 17-Goulais Bay.....	.....	9,652.82	9,652.82
553	Massey-Sauble River Road.....	9,095.75	26,677.13	35,772.88
554	Jct. Hwy. No. 129-Sec. Hwy. No. 546..	.....	13,170.88	13,170.88
555	Blind River-Lake Duborne.....	2,910.63	15,230.49	18,141.12
556	Island Lake-Wabos.....	9,776.50	46,234.03	56,010.53
557	Blind River-Lake Matinenda.....	5,821.28	26,170.93	31,992.21
558	Haileybury-Montreal River.....	8,481.47	28,039.10	36,520.57
560	Englehart-Gogama.....	66,825.92	225,727.67	292,553.59
561	Bruce Mines-Dunns Valley.....	2,546.82	37,713.76	40,260.58
562	Jct. Hwy. No. 65-Thornloe.....	.....	17,666.64	17,666.64
563	Jct. Hwy. No. 17-Batelawana.....	.....	3,470.46	3,470.46
564	Jct. Hwy. No. 112-Boston Creek.....	.....	11,506.78	11,506.78
565	Jct. Sec. Hwy. 550-Pointe aux Pins.....	14,108.29	6,469.65	20,577.94
566	Matatchewan-Ashley Mine.....	.....	25,206.01	25,206.01
567	Jct. Hwy. No. 11-Silver Centre.....	8,117.56	35,163.07	43,280.63
568	Jct. Hwy. No. 11-Kenogami.....	.....	1,738.60	1,738.60
569	Jct. Hwy. No. 11-S. of Englehart-Jct. Hwy. No. 11, N. of Hanbury.....	3,000.00	39,941.49	42,941.49
570	Jct. Hwy. No. 11-Sesekinika.....	.....	4,520.33	4,520.33
571	Earlton-Sec. Hwy. No. 562.....	9,597.93	5,449.90	15,047.83
572	Ramore-Holtyre Mine.....	11,080.57	Cr. 2,873.82	8,206.75
573	Jct. Hwy. No. 11-Charlton.....	4,611.82	22,063.29	26,675.11
574	Cochrane-Norembea.....	25,901.61	41,813.39	67,715.00
575	Night Hawk Centre-Night Hawk Lake.....	.....	4,442.61	4,442.61
576	Jct. Hwy. No. 101-Kamiskotia Lake Road.....	.....	3,206.10	3,206.10
577	Shillington-Iroquois Falls.....	8,043.55	29,795.34	37,838.89
578	Iroquois Falls-Nellie Lake.....	3,492.90	21,965.40	25,458.30

Highway No.	Location	Construction	Maintenance	Total
579	Cochrane-Gardiner.....	\$ 19,386.86	\$ 34,093.90	\$ 53,480.76
580	Jct. Hwy. No. 11-Leitch.....	19,261.64	4,805.33	24,066.97
581	Jct. Hwy. No. 11-Remi Lake.....		11,845.82	11,845.82
582	Huckett Cut-off.....	12,171.91	3,741.02	15,912.93
583	Mead-Lac Ste. Therese.....	35,026.10	62,756.60	97,782.70
584	Hardrock Mine-Nakina.....	45,881.27	42,230.53	88,111.80
585	Nipigon-Pine Portage.....	4,215.15	49,062.86	53,278.01
586	Shebandowan Lake-Jct. Hwy. No. 120	7,356.95	1,436.47	8,793.42
587	Jct. Hwy. No. 17-Silver Islet.....	11,896.05	58,728.70	70,624.75
588	Jct. Hwy. No. 17-Round Lake.....	16,699.61	48,800.06	65,499.67
589	Jct. Hwy. No. 17A-Dog Lake.....	1,843.03	34,396.70	36,239.73
590	Nolalu-Jct. Hwy. No. 130.....	13,063.58	62,467.49	75,531.07
591	Sec. Hwy. No. 589-Trout Lake.....	3,819.97	8,275.74	12,095.71
592	Fort Frances-Rainy Lake.....	75.00	4,299.54	4,374.54
593	Whitefish, Easterly.....	3,244.88	19,463.88	22,708.76
594	Eagle River-Dryden.....	20,559.35	23,134.11	43,693.46
595	Sec. Hwy. No. 590-Sec. Hwy. No. 597	140.66	43,606.51	43,747.17
596	Keewatin-Jct. Hwy. No. 17.....	21,276.52	20,240.90	41,517.42
597	Sec. Hwy. No. 595-Sec. Hwy. No. 608		8,032.57	8,032.57
598	Sec. Hwy. No. 128-Sec. Hwy. No. 604		6,132.06	6,132.06
599	Savant Lake-Pickle Crow.....	45,451.77	73,824.25	119,276.02
600	Black Hawk-Sec. Hwy. No. 623.....	2,684.79	36,686.55	39,371.34
601	Dryden-Rice Lake Loop.....	232.11	23,728.68	23,960.79
602	Fort Frances-Emo.....	22,536.25	26,238.59	48,774.84
603	Dymont-Borups Corners.....	2,774.14	5,148.23	7,922.37
604	Kenora-Silver Lake.....		18,728.16	18,728.16
605	Jct. Hwy. No. 17-Eton-Rugby.....		13,586.23	13,586.23
606	Jct. Hwy. No. 17-Markstay.....	28,489.88	2,367.01	30,856.89
607	French River-Jct. Hwy. No. 64.....		31,249.15	31,249.15
607A	Jct. Hwy. No. 69-Bigwood.....		2,095.35	2,095.35
608	Moose Hill-Jct. Sec. Hwy. No. 595.....	10.47	6,991.79	7,002.26
609	Jct. Hwy. No. 105-Clay Lake.....	13,333.96	5,587.57	18,921.53
610	Barbers Bay-Hoyle.....		17,392.15	17,392.15
611	Crozier, North and South.....	7,702.75	15,626.33	23,329.08
613	Big Fork-Lake Despair.....		44,925.99	44,925.99
614	Jct. Hwy. No. 17-Manitouawadge.....	663,647.72	64,519.85	728,167.57
615	Black Hawk-Burditt Lake.....	30,645.13	29,682.22	60,327.35
616	Hwy. No. 101-Groundhog River.....	15,139.06	48,108.32	63,247.38
617	Stratton-North Branch.....		19,919.80	19,919.80
618	Red Lake-Madsen.....		18,783.56	18,783.56
619	Pinewood-Sec. Hwy. No. 621.....		40,312.69	40,312.69
620	Jct. Hwy. No. 62-Glen Alda.....	68,736.30	21,588.46	90,324.76
621	Sleeman-Morson.....	137,755.87	47,328.69	185,084.56
622	Atikokan-Caland Ore Mine.....		9,893.58	9,893.58
623	Rainy River-Harris Hill.....		21,809.87	21,809.87
624	Foleyet-Sec. Hwy. No. 616.....	20,051.70	2,937.29	22,988.99
625	Jct. Hwy. No. 11-Caramat.....	24,672.15	17,109.10	41,781.25
627	Jct. Hwy. No. 17-Heron Bay.....	16,223.95	3,630.06	19,854.01
629	Timmins Airport Road.....	107,908.75	Cr. 11,544.16	96,364.59
631	Jct. Hwy. No. 11-Hornepayne.....	21,435.64	27,313.24	48,748.88
633	Jct. Hwy. No. 11-Kawene.....	1,877.91		1,877.91
635	Jct. Hwy. No. 17-Des Joachims.....	28.13	182.46	210.59
Total Expenditures Allocated to Secondary Highways.....		\$4,680,541.68	\$4,118,447.33	\$8,798,989.01
450	Ferries.....	\$ 16,751.97	\$ 241,721.19	\$ 258,473.16
453	Queensway, Toronto.....	15,060.76		15,060.76
454	Bloor Street, Toronto.....	288,488.17		288,488.17
455	Yonge Street, Toronto.....	14,934.22		14,934.22
456	Dundas Street, Toronto.....	213,802.01		213,802.01
457	Lakeshore Expressway, Toronto.....	6,161.80		6,161.80
458	Ottawa Queensway.....	3,686,605.89		3,686,605.89
700	North Bay Airport Road.....		11,510.59	11,510.59
701	Pelee Island.....		21,726.88	21,726.88
702	Bicroft Mine Road.....	410.15		410.15

HIGHWAY No.	LOCATION	CONSTRUCTION	MAINTENANCE	TOTAL
707	Burwash-Killarney.....	\$ 509,724.48	\$	\$ 509,724.48
708	Hill Island.....		3,883.35	3,883.35
709	Geraldton Cut-off.....	19,293.50	2,310.46	21,603.96
712	Sunnidale Road.....	93,147.38		93,147.38
713	Chapleau-Foleyet.....	797.00		797.00
951	Miscellaneous Surveys.....	287,827.87		287,827.87
	Sidewalks.....	38,197.17		38,197.17
	Connecting Links.....	1,924,982.91	384,298.03	2,309,280.94
	Unincorporated Township Roads.....	421,206.33	643,039.08	1,064,245.41
	Development Roads.....	7,674,741.01	206,083.95	7,880,824.96
	Development Roads — Credit Adjustment.....	Cr. 9,677.25	.....	Cr. 9,677.25
HIGHWAY TOTALS.....		\$143,703,365.89	\$29,147,524.94	\$172,850,890.83
Sundry Unallocated District Office Administrative, Engineering, Building, Inventory Charges, etc.....		\$3,232,422.36	\$9,495,315.41	\$12,727,737.77
TOTAL EXPENDITURES.....		\$146,935,788.25	\$38,642,840.35	\$185,578,628.60

APPENDIX No. 3

SCHEDULE OF CONTROLLED-ACCESS HIGHWAYS

April 1, 1959 to March 31, 1960

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
3	St. Thomas Entrance.....	63/60	
	Twp. of Yarmouth.....		0.32
	Twp. of Southwold.....		0.73
7	Langstaffe Diversion.....	205/59	
	Markham Twp.....		1.23
10	Orangeville By-pass.....		
	Twp. of Mono.....		1.00
12	Gamebridge Diversion.....	258/59	
	Thorah Twp.....		0.74
	Mara Twp.....		0.65
15	Drummond Twp. Diversion.....		7.35
15	Carleton Place By-pass.....		
	Twp. of Beckwith.....		2.12
16	Johnstown Diversion.....	204/59	
	Edwardsburgh Twp.....		1.30
17	Docker Twp. Diversion.....	81/59	2.17
	Kakabeka Falls Diversion.....	81/59	
	Oliver Twp.....		0.94
27	Brown's Line.....	22/60	
	Twp. of Etobicoke.....		2.65
37	Corbyville Diversion.....	204/59	
	Thurlow Twp.....		2.68
39	Tecumseth By-pass.....		
	Twp. of Maidstone.....		4.66
	Twp. of Sandwich E.....		2.00
51	Caledon Twp. Diversion.....	82/59	1.30
60	Killaloe Station By-pass.....	204/59	
	Hagarty Twp. & Village of Killaloe Station.....		3.60
	Hagarty & N. Algona Twps.....		3.36
64	Lavigne By-pass.....	270/59	
	MacPherson Twp.....		0.96
68	Espanola Diversion.....	5/60	
	Town of Espanola.....		2.08
69	Nobel to Britt.....	81/59	
	MacDougall Twp.....		0.18
71	Rainy River Bridge Approach.....	206/59	
	Town of Rainy River.....		1.36
400	Coldwater to Gravenhurst.....	65/60	
	Twp. of Medonte.....		2.50
	Twp. of Orillia.....		1.21
	Twp. of Matchedash.....		10.08
401	Toronto to Quebec Boundary.....		
	North York Twp.....	59/59	4.71
	Scarborough Twp.....		9.00
	Scarborough Twp.....		1.80
	Pickering Twp.....		9.30
	Whitby Twp.....	83/59	4.75
	E. Whitby Twp.....		2.75
	E. Whitby Twp.....		2.00
	Darlington Twp.....		8.20
	Clarke Twp.....		1.80
	Clarke Twp.....		7.22
	Hope Twp.....		9.03
	Hamilton Twp.....		9.35
	Haldimand Twp.....		9.36
	Cramahe Twp.....		6.47
	Brighton Twp.....	127/59	6.37
	Murray Twp.....		5.20

Hwy. No.	DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
Sandwich South Twp.....	.....	2.40
Sandwich South Twp.....	.....	5.13
Oliver Twp. Diversion — Hwy. 590.....	80/59	0.52
O'Connor Twp. Diversion.....	80/59	0.14
Homer to Queenston.....	292/59	.....
Niagara & Stamford Twps.....	.....	5.02

INTERCHANGE	DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
Windsor to Quebec Boundary.....
Highway 97 — N. Dumfries Twp.....	58/59	.....
Bayview Avenue.....	59/59	.....
Leslie Street.....
Woodbine Avenue.....
Victoria Park Ave. — N. York Twp.....
Victoria Park Ave. — Scarborough.....
Warden Avenue.....
Kennedy Road.....
Markham Road.....
Little's Road.....
Highland Creek.....
Townline & Kingston Road.....
Road Allowance between Twps. of Scarborough & Pickering.....
Liverpool.....
Pickering.....	83/59	.....
Ajax.....
Brock Street.....
Thickson Road.....
Cromwell Avenue.....
Simcoe Street.....
Bloor Street.....
Liberty Street.....
Mill Street.....
Newtonville Side Road.....
Highway 2 — Hope Twp.....
Highway 28 — Hope Twp.....
Burnham Street.....
Centreton Road.....
Castleton Road.....	127/59	.....
Highway 30 — Brighton Twp.....
Wooler Road.....
Highway 33 — Murray Twp.....
County Road 5A — Sidney Twp.....
Highway 14 — Thurlow Twp.....
Highway 37 — Thurlow Twp.....
Townline — Richmond Twp.....
Highway 41 — Richmond Twp.....
County Road 4 — Ernestown Twp.....
Highway 38 — Kingston Twp.....
Sydenham Road.....
Division Street.....
Montreal Street.....
Joyceville Side Road.....
Highway 32 — Leeds Twp.....	235/59	.....
Highway 2 — Elizabethtown Twp.....
Highway 29 — Elizabethtown Twp.....	235/59	0.36
North Augusta Road.....
Maitland & Merrickville Road.....
Kemptville Road.....
County Road 22 — Edwardsburgh Twp.....
County Road 1 — Matilda Twp.....

INTERCHANGE	DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
Highway 31 — Williamsburgh Twp.....
County Road 12 — Osnabruk Twp.....
Moulinette Road.....
County Road 26 — City of Cornwall.....
County Road 26 — Charlottenburgh Twp.....
Nine Mile Road.....
Highway 34 — Charlottenburgh Twp.....
Highway 34 — Lancaster Twp.....
Leslie St. — Twp. of N. York.....	24/60	.....
Highway 45 — Twp. of Hamilton.....
Toronto to Windsor.....
Yonge Street.....	221/59	0.27
Avenue Road.....
Bathurst Street.....
Dufferin Street.....
Keele Street.....
Jane Street.....
Highway 400 — N. York Twp.....
Weston Road.....
Islington Avenue.....
Dixon Road.....
Highway 27 — Etobicoke Twp.....	0.57
Renforth Drive.....	269/59	.....
Dixie Road.....
Highway 10 — Toronto Twp.....
Streetsville Road.....
Hornby Road.....
Highway 25 — Esquesing Twp.....
Nelson Street.....
Highway 6 — Puslinch Twp.....
County Road 50 — Puslinch Twp.....
Pine Bush Road — Puslinch Twp.....
Pine Bush Road — Waterloo Twp.....
Highway 24 — Waterloo Twp.....
Highway 2 — Blandford Twp.....
Highway 2 — East Oxford Twp.....
County Road 14 — East Oxford Twp.....
Highway 59 — East Oxford Twp.....
Sweaburg Road — East Oxford Twp.....
Sweaburg Road — West Oxford Twp.....
Putnam Road.....
Highway 73 — N. Dorchester Twp.....
County Road 32 — N. Dorchester Twp.....	269/59	.....
Highway 74 — N. Dorchester Twp.....
Highway 74 — Westminster Twp.....	47/60	.....
County Road 37 — Westminster Twp.....
Highbury Avenue.....
Wellington Road.....
Highway 4 — Westminster Twp.....
Town Line — Delaware Twp.....
County Road 19 — Southwold Twp.....
County Road 14 — Southwold Twp.....
County Road 14 — Dunwich Twp.....
Dutton Road.....
County Road 5 — Dunwich Twp.....
County Road 5 — Aldborough Twp.....
Highway 76 — Aldborough Twp.....
Furnival Road.....
Highgate Road.....
Highway 21 — Howard Twp.....
County Road 15 — Howard Twp.....
County Road 15 — Harwich Twp.....
Communication Road.....
County Road 10 — Harwich Twp.....
County Road 10 — Raleigh Twp.....
Highway 2 — Tilbury East Twp.....

INTERCHANGE	DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
Highway 2 — Tilbury North Twp.....		
County Road 12 — Tilbury West Twp..		
County Road 11 — Rochester Twp.....		
Belle River Road.....		
County Road 8 — Maidstone Twp.....		
County Road 7 — Maidstone Twp.....		
County Road 7 — Sandwich South Twp.....		
Highway 98 — Sandwich South Twp.....		
Windsor Entrance.....		
Highway 3 — Sandwich South Twp.		
Howard Avenue.....		
Highway 3B — Sandwich West Twp...		
Highway 97 — Twp. of N. Dumfries...	23/60	
Drumbo Road — Twp. of Blenheim..		
TOTAL MILEAGE AS OF MARCH 31, 1960		1212.45
TOTAL MILEAGE DESIGNATED DURING FISCAL YEAR ENDING MARCH 31, 1960		596.77

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND REDESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1960

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-2888-1	Hilton ..	July 9, 59	548	0.175
Bruce	P-2898-11.....	Lindsay.....	Jan. 14/60	6	5.570
Cochrane.....	P-2662-30.....	Calder.....	April 16/59	11	1.780
	P-2662-31.....	Calder.....	April 16/59	11	7.200
	P-2322-30.....	Calvert.....	Mar. 26/59	11	1.200
	P-2322-31.....	Calvert.....	April 16/59	11	0.460
	P-2662-29.....	Colquhoun.....	Mar. 26/59	11	1.520
	P-2214-17.....	Hanna.....	Mar. 26/59	11	3.280
	P-2291-39.....	Idington.....	May 14/59	11	0.680
	P-2291-40.....	Idington.....	June 24/59	11	1.100
	P-2608-22.....	Kendall.....	Mar. 26/59	11	0.260
	P-2879-25.....	Kendrey.....	April 30/59	11	1.020
	P-2213-30.....	Lamarche.....	Mar. 26/59	11	3.000
	P-2775-25.....	McCrea.....	May 21/59	11	1.020
	P-2908-25.....	Owens.....	April 30/59	11	0.480
	P-2916-22.....	Williamson.....	April 30/59	11	1.320
	P-2335-14.....	Tisdale.....	Feb. 11/60	101	2.800
Dufferin.....	P-1835-32.....	Mono.....	Oct. 29/59	10, 24	1.000
Durham	P-2553-21.....	Manvers.....	Mar. 24/60	7A	9.950
Elgin	P-3248-16.....	Bayham.....	Mar. 10/60	3	1.080
	P-1450-52.....	Southwold.....	Nov. 5/59	3	0.730
	P-2058-52.....	Yarmouth.....	Dec. 17/59	3	0.320
Essex	P-3020-21.....	Rochester.....	July 30/59	401	0.000
	P-2959-57.....	Sandwich S.....	Sept. 3/59	401	0.000
	P-2959-58.....	Sandwich S.....	Sept. 10/59	401	0.000
	P-2959-59.....	Sandwich S.....	Sept. 10/59	401	0.000
	P-3101-4.....	Sandwich W.....	Sept. 3/59	401	0.000
	P-2966-13.....	Maidstone.....	Oct. 29/59	39	4.660
	P-2840-26.....	Sandwich E.....	Oct. 29/59	39	2.000
	P-3367-4.....	Sandwich W.....	Feb. 28/59	3B	0.200
	P-3023-23.....	Tilbury N.....	Aug. 13/59	401	0.000

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
	P-2399-6.....	Sandwich W.....	April 16/59	18	1.330
	P-3367-3.....	Sandwich W.....	May 28/59	3B	0.500
Frontenac.....	P-2552-2.....	Oso.....	July 9/59	509	0.060
	P-2489-2.....	Palmerston.....	July 9/59	509	5.500
Glengarry.....	P-3178-5.....	Lancaster.....	Nov. 19/59	401	5.680
Grenville.....	P-1825-11.....	Edwardsburgh.....	May 28/59	16	1.200
Grey.....	P-1671-22.....	Collingwood-Glenelg.....	Mar. 10/60	26	1.620
	P-1842-41.....	Bentinck.....	Mar. 10/60	6	0.650
Haldimand.....	P-1928-23.....	N. Cayuga.....	Oct. 29/59	3	12.810
	P-2764-10.....	Seneca.....	May 14/59	56	5.900
Halton.....	P-3172-36.....	Nassagaweya.....	Mar. 3/60	401	0.260
	P-1738-25.....	Trafalgar.....	Nov. 19/59	25	6.170
Hastings.....	P-1926-20.....	Thurlow.....	May 14/59	37	2.670
Huron.....	P-2225-14.....	Colborne.....	Feb. 11/60	21	0.230
	P-2766-38.....	Turnberry.....	Mar. 10/60	86	2.500
Kenora.....	P-2300-12.....	Atwood.....	Sept. 2/59	11	1.360
Kent.....	P-3167-33.....	Harwich.....	Aug. 27/59	401	0.000
	P-3169-18.....	Oxford.....	Aug. 13/59	401	0.000
Lanark.....	P-1796-27.....	Beckwith.....	Nov. 19/59	15	2.120
	P-2007-38.....	Drummond.....	Sept. 17/59	15	7.350
Lambton.....	P-2973-6.....	Brooke.....	Feb. 11/60	80	1.700
	P-1859-13.....	Dawn.....	Dec. 17/60	21	0.050
Leeds.....	P-3337-10.....	Leeds.....	Jan. 14/60	2	0.240
Middlesex.....	P-3525.....	W. Nissouri.....	June 4/59	7	1.250
	P-2672-35.....	Lobo.....	Dec. 17/60	22	1.260
	P-2834-10.....	McGillivray.....	Dec. 17/60	81	1.060
	P-2661-19.....	Mosa.....	Dec. 17/60	80	2.350
Nipissing.....	P-2136-47.....	W. Ferris.....	Oct. 1/59	11	0.430
	P-2724-5.....	MacPherson.....	Aug. 27/59	64	0.950
Norfolk.....	P-1814-45.....	Windham-Middleton.....	Mar. 26/59	3	13.020
Northumberland.....	P-3177-41.....	Cramahe.....	April 27/59	401	6.470
	P-3176-27.....	Brighton.....	June 22/59	401	6.370
	P-3073-42.....	Murray.....	June 22/59	401	5.200
Ontario.....	P-1893-26.....	Mara.....	Nov. 4/59	12	0.650
	P-1605-14.....	Thorah.....	Sept. 2/59	12	0.740
Oxford.....	P-3079-30.....	Blandford.....	Aug. 13/59	401	0.000
Parry Sound.....	P-2586-13.....	Croft.....	Nov. 19/59	124	1.330
	P-2130-60.....	S. Himsworth.....	Feb. 11/60	11	1.780
Peel.....	P-1573-35.....	Caledon.....	Oct. 8/59	10	0.760
	P-2981-22.....	Caledon.....	Oct. 8/59	24	0.430
	P-3339-8.....	Caledon.....	Sept. 10/59	51	0.550
Perth.....	P-2212-28.....	Mornington.....	Mar. 10/60	19	1.270
	P-1958-13.....	Blanshard.....	June 4/59	7	1.250
Rainy River.....	P-3579.....	Unsurveyed Territory.....	Oct. 29/59	633	3.750
Renfrew.....	P-2221-24.....	Buchanan.....	July 13/59	17	4.360
	P-7010.....	Rolph.....	Mar. 10/60	635	1.590
	P-2201-41.....	Algona N. and Hagarty.....	June 4/59	60	3.300
	P-3544.....	Brudenell.....	July 30/59	512	4.000
	P-2202-17.....	Hagarty.....	June 18/59	60	3.520
	P-3543.....	Sebastopol and South Algona..	July 30/59	512	3.500
Simcoe.....	P-1608-20.....	Tiny-Flos.....	April 16/59	27	6.240
	P-2429-13.....	Vespra-Essa.....	Jan. 14/60	90	0.440
	P-2783-4.....	Essa.....	Jan. 14/60	90	0.490
	P-7005.....	Matchedash.....	Jan. 14/60	400	2.576
	P-3346-38.....	Medonte.....	Dec. 3/59	400	2.570

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	Hwy. No.	MILES
	P-7006.....	Orillia.....	Jan. 14/60	400	0.250
	P-1607-7.....	Sunnidale.....	May 14/59	26	6.300
Stormont.....	P-3147-27.....	Cornwall.....	Sept. 10/59	401	0.090
Sudbury.....	P-2925-3.....	Indian Res.....	June 24/59	68	1.820
	P-2302-33.....	Merritt.....	Oct. 8/59	68	1.197
	P-2302-35.....	Merritt.....	Oct. 29/59	68	3.980
Temiskaming.....	P-2160-32.....	Armstrong.....	Feb. 11/60	11	0.930
	P-2545-16.....	Teck.....	July 9/59	66	0.500
Thunder Bay.....	P-3426-5.....	Errington.....	Aug. 6/59	584	0.250
	P-3530.....	Blake.....	July 16/59	608	0.017
	P-3097-3.....	Ames.....	Mar. 26/59	11	6.120
	P-3510.....	Colliver.....	Mar. 19/59	17 T.C.	2.160
	P-3093-12.....	Conacher.....	July 9/59	11	6.660
Thunder Bay.....	P-3484-1.....	Daley.....	May 14/59	11	1.590
	P-2874-4.....	Fallis.....	July 9/59	17 T.C.	5.000
	P-3018-3.....	Goldie.....	July 9/59	17 T.C.	5.120
	P-3089-4.....	Haines.....	Sept. 23/59	11	5.970
	P-3037-1.....	Joynt.....	Mar. 19/59	17 T.C.	7.140
	P-2461-56.....	Nipigon.....	Mar. 6/59	17 T.C.	1.686
	P-3137-4.....	Seventy-two.....	Feb. 11/60	17 T.C.	2.935
	P-3139-6.....	Seventy-three.....	Jan. 21/60	17 T.C.	6.325
	P-3201-3.....	Soper.....	Mar. 26/59	17 T.C.	6.090
	P-3043-1.....	Stedman.....	Mar. 26/59	17 T.C.	7.400
	P-3091-12.....	Unsurveyed Terr.....	July 30/59	11	13.620
	P-3091-13.....	Unsurveyed Terr.....	June 24/59	11	7.440
	P-3091-14.....	Unsurveyed Terr.....	July 30/59	11	0.460
Waterloo.....	P-3164-28.....	N. Dumfries.....	July 23/59	401	0.000
Welland.....	P-2043-11.....	Thorold.....	May 28/59	58	0.880
	P-3541.....	Stamford.....	Dec. 21/59	Q.E.W.	5.020
Wellington.....	P-2440-15.....	Erin.....	Oct. 8/59	24	0.430
Wentworth.....	P-1411-14.....	Ancaster.....	Aug. 6/59	8, 12	0.078
York.....	P-2948-83.....	Etobicoke.....	Sept. 21/59	401	0.410
	P-2083-128.....	Etobicoke.....	Jan. 25/60	27	2.635
	P-1980-36.....	E. Gwillimbury.....	Mar. 3/60	11	2.576
	P-1658-54.....	Markham.....	Sept. 2/59	7	1.230
	P-2103-37.....	Vaughan.....	Jan. 21/60	27	7.100
	P-2106-12.....	Vaughan.....	Feb. 11/60	49	3.220
	P-5001.....	Vaughan.....	Dec. 30/59	50	6.400
	P-2770-304.....	N. York.....	Sept. 21/59	401	6.940
	P-2770-380.....	N. York.....	Jan. 25/60	401	0.400
TOTAL PLANS.....		126	TOTAL MILEAGE.....		334.530

APPENDIX No. 3B

**SCHEDULE OF REVERSIONS AND TRANSFERS OF SECTIONS OF
THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS
FOR THE FISCAL YEAR ENDING MARCH 31, 1960**

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-2400-23.....	Gladstone.....	Dec. 12/59	17	0.510
	P-2888-2.....	Hilton.....	July 23/59	548	0.210
	P-2220-17.....	Johnson.....	May 7/59	17	7.250
	P-2237-7.....	Laird.....	June 11/59	17	1.260
	P-3236-12.....	One-Forty-Nine.....	Mar. 19/59	108	0.280
	P-2104-23.....	Plummer (Additional).....	Jan. 2/60	17	0.230
	P-2249-15.....	Tarbutt,			
		Tarbutt (Additional).....	Apr. 30/59	17	4.000
Bruce.....	P-2253-43.....	Thessalon.....	Nov. 28/59	17	2.500
	P-2896-12.....	Kinloss.....	Nov. 28/59	86	0.770
	P-3462-1.....	Town of Wiarton.....	Mar. 28/59	6	0.310
Carleton.....	P-2149-21.....	Osgoode.....	Sept. 26/59	31	0.134
Cochrane.....	P-2608-21.....	Kendall.....	April 16/59	11	0.170
	P-2322-32.....	Calvert.....	June 24/59	11, 67	0.460
	P-2335-13.....	Tisdale.....	Mar. 12/60	101	1.210
Elgin.....	P-2092-3.....	Aldborough.....	Feb. 13/60	77	4.360
	P-2240-7.....	Dunwich.....	Feb. 6/60	75	2.660
	P-1917-33.....	Bayham.....	Oct. 3/59	19	0.900
Grenville.....	P-1668-15.....	Edwardsburgh.....	Sept. 26/59	2	0.260
Grey.....	P-1869-41.....	Egremont-Normanby.....	April 9/60	6	0.330
Halton.....	P-1738-28.....	Trafalgar.....	Mar. 12/60	25	1.250
	P-2070-109.....	Nelson.....	April 16/59	Q.E.W.	1.220
Hastings.....	P-1963-21.....	Hungerford.....	Mar. 26/60	37	0.057
Kent.....	P-2809-13.....	Chatham.....	Feb. 21/60	26	0.610
	P-3241-7.....	Dover.....	May 14/59	2	1.200
	P-1951-16.....	Raleigh.....	May 21/59	2	1.080
Leeds.....	P-1987-52.....	Elizabethtown.....	May 7/59	29	0.280
	P-1581-6.....	Elmsley South.....	April 30/59	29	0.660
	P-1553-25.....	Elmsley South.....	April 30/59	15	1.100
	P-1787-12.....	Leeds.....	Aug. 6/59	32	0.100
Middlesex.....	P-2672-34.....	Lobo.....	Dec. 17/59	22	0.450
	P-2044-13.....	W. Williams.....	Dec. 19/59	7	0.680
	P-3053-96.....	Westminster.....	June 24/59	401	0.740
Norfolk.....	P-1814-47.....	Middleton.....	July 9/59	3	0.210
Northumberland	P-1925-21.....	Cramahe.....	Aug. 13/59	2	0.910
	P-1925-22.....	Cramahe.....	Aug. 6/59	2	0.150
	P-2516-20.....	Percy.....	Mar. 12/60	45	2.120
Ontario.....	P-2310-67.....	Pickering.....	June 24/59	401	0.270
	P-2372-49.....	E. Whitby.....	Nov. 29/59	401	0.570
Oxford.....	P-2081-29.....	E. Oxford-Blandford.....	April 2/60	2	0.900
Peel.....	P-1857-185.....	Toronto.....	Mar. 12/60	Q.E.W.	0.020
	P-3339-11.....	Caledon.....	Feb. 13/60	51	0.500
Perth.....	P-2006-36.....	Downie.....	April 30/59	7	0.320
Renfrew.....	P-2655-24.....	Wilberforce.....	June 18/59	60	0.370
	P-2655-25.....	Wilberforce.....	June 24/59	60	0.820
Russell.....	P-1775-22.....	Clarence.....	May 21/59	17	1.100

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Simcoe	P-1856-30	S. Orillia	Mar. 26/59	11	0.200
	P-1856-31	S. Orillia	Mar. 26/59	11	0.360
	P-2203-7	S. Orillia	Mar. 19/59	12 T.C.	0.820
	P-2203-8	S. Orillia	Mar. 26/59	12 T.C.	0.110
	P-1607-8	Sunnidale	Nov. 7/59	26	6.300
	P-2759-67	W. Gwillimbury	Mar. 26/59	400	0.170
	P-1426-37	Innisfil	Dec. 5/59	11	0.450
	P-2054-24	Innisfil	Oct. 29/59	400	0.047
	P-2756-74	Innisfil	Jan. 16/60	400	3.333
	P-1729-9	Vespra	Nov. 28/59	11	1.446
	P-1729-10	Vespra	Nov. 28/59	11	0.465
	P-2079-26	Vespra	Nov. 28/59	400	0.670
	P-2429-12	Vespra	Nov. 28/59	400	0.048
	P-2847-93	Vespra	Jan. 29/60	400	0.210
	P-1608-21	Flos	Nov. 7/59	27	0.110
	P-1904-23	Nottawasaga	Mar. 12/60	26	0.019
	P-1834-23	Tay	April 9/60	27	0.023
	P-1834-22	Tiny	Nov. 28/59	27	0.070
	P-2079-25	Vespra-Flos	Nov. 7/59	27	0.270
	P-2212-27	Mornington	Feb. 13/60	19	0.830
	P-2766-39	Turnberry-Morris	Mar. 10/60	86	3.300
Sudbury	P-2138-6	Capreol	Jan. 1/60	69	0.680
	P-2976-40	McKim	Nov. 27/59	69	0.140
	P-2976-41	McKim	Feb. 27/60	69	0.150
Temiskaming	P-2545-11	Teck	Mar. 19/59	66	0.170
Wellington	P-2426-11	Eramosa	Nov. 29/59	24	0.056
	P-1983-18	Minto	July 9/59	87	0.450
	P-2807-7	Minto	July 9/59	87	0.380
Wentworth	P-1411-14	Ancaster	Aug. 6/59	8, 12	0.076
	P-1782-26	Saltfleet	May 14/59	8	0.110
York	P-2083-123	Etobicoke	Nov. 7/59	27	1.300
	P-2752-90	King	Mar. 26/59	400	1.120
	P-2106-11	Vaughan	Sept. 27/59	49	0.110
TOTAL PLANS		78	TOTAL MILEAGE		69.484

APPENDIX No. 4 BRIDGES COMPLETED DURING 1959

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Alta Vista Drive Bridge No. 31, Underpass	Steel Beam	2 @ 96'	Ottawa Queensway	Gloucester	...	...	Carleton	9
Appleby Line Underpass	Concrete Box Girder (Prestressed)	114'-0"	O.E.W. Hamilton-Toronto	Nelson	5	II-III	Halton	6
Arrow River Bridge	Standard Crosotred Timber	2 @ 32'	Dev. Road No. 593 Devon Road	Devon	...	...	Thunder Bay	19
Augusta Twp. Bridge No. 1 (Maitland Rd.)	Concrete Hollow Box-Girder	106'-0"	Hwy. 401 Brockville-Prescott	Augusta	29-30	I	Grenville	8
Avenue "M" Bridge No. 35 Underpass	Steel Beam	2 @ 79'-3"	Ottawa Queensway	Gloucester	...	...	Carleton	9
Baldhead River Bridge East Branch	Steel Beam	51'-0"	Hwy. 17 T.C.H. Wawa-Agawa	No. 30	Range	XIX	Algoma	56-1
Baldhead River Bridge West Branch	Steel Beam	46'-0"	Hwy. 17 T.C.H. Wawa-Agawa	No. 30	Range	XIX	Algoma	56-1
Barrett River Bridge	Concrete rigid frame	50'-0"	Hwy. 17 T.C.H. Wawa-Agawa	No. 29	Range	XVII	Algoma	56-1
Bear Creek Bridge	Concrete rigid frame	2 @ 35'	Hwy. 40 Chatham-Sarnia	Chatham-Dover	1 & 24	XI	Kent	1
Beckwith Twp. C.P.R. Overhead	Concrete rigid frame	50'-6"	Hwy. 15 T.C.H. Ottawa-Perth	Beckwith	14	X-XI	Lanark	9
Bertrand Creek Bridge	Continuous steel beam	35'-50'-35'	Hwy. 17 T.C.H. Marathon-White River	No. 70	...	...	Thunder Bay	56-1
Big Creek Bridge No. 1	Concrete rigid frame	40'-0"	Hwy. 40 Chatham-Sarnia	Chatham-Dover	1 & 24	VIII	Kent	1
Big Creek Bridge No. 2	Concrete rigid frame	40'-0"	Hwy. 40 Chatham-Sarnia	Chatham-Dover	1 & 24	VIII	Kent	1
Big Creek Bridge No. 3	Concrete rigid frame	40'-0"	Hwy. 40 Chatham-Sarnia	Chatham-Dover	1 & 24	VIII	Kent	1
Big Creek Bridge No. 4	Concrete rigid frame	40'-0"	Hwy. 40 Chatham-Sarnia	Chatham-Dover	1 & 24	VIII	Kent	1
Bronte Creek Bridge (Widening)	Concrete Arch Rib	48'-11"/135'-2"/135'-2"/49'-6 1/2' / 48'-11"	O.E.W. Hamilton-Toronto	Trafalgar	31	11 S.D.S.	Halton	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Carling Ave. Bridge No. 5 East Branch Overpass	Steel beam	64' 8"	Ottawa Queensway	Gloucester			Carleton	9
Carling Ave. Bridge No. 7 West Branch Overpass	Steel beam	60'	Ottawa Queensway	Gloucester			Carleton	9
Catfish Creek Bridge No. 1	Steel girder	69'	Hwy. 17 (T.C.H.) White River Wawa	No. 30	Range	XXV	Algoma	56-1
Catfish Creek Bridge No. 2	Concrete rigid frame Double Box Culvert	2 @ 20'	Hwy. 17 (T.C.H.) White River Wawa	No. 30	Range	XXV	Algoma	56-1
Clarke Twp. Bridge No. 5 Underpass	Concrete beam (Prestressed)	38'-105'-38'	Hwy. 401 Hwy. 115-Newcastle	Clarke	32-33	I	Durham	7
Clarke Twp. Bridge No. 8 (Mill St.) Underpass	Concrete rigid frame Box girder	110'-0"	Hwy. 401 Hwy. 115-Newtonville	Clarke	28	I	Durham	7
Clarke Twp. Bridge No. 16 Underpass	Concrete rigid frame	102' 0"	Hwy. 401 Newcastle-Newtonville	Clarke	16-17	I	Durham	7
Clyde Ave. Bridge No. 4 Overpass	Steel beam	69'-5"	Ottawa Queensway	Gloucester			Carleton	9
Coldwater River Bridge	Steel beam	60' 0"	Hwy. 12 (T.C.H.) Coldwater-Orillia	Medonte	21	XI	Simcoe	11
Coldwater Creek Bridge	Steel plate girder	60'-80'-60'	Hwy. 17 (T.C.H.) Port Arthur-Nipigon	Dorion	10	II III	Thunder Bay	19
Coldwater River Bridge	Steel Plate Girder	85'	Hwy. 17 (T.C.H.) Wawa-Agawa	No. 30	Range	XVII	Algoma	56-1
Coldwater River Bridge	Continuous steel beam	38' 5 1/8" 52' 1 3/8" 34' 5 1/8"	Hwy. 400 Craighurst Hwy. 12	Medonte	19	XI	Simcoe	11
Connell Twp. Creek Bridge	Standard cross-timber	26'	Sec. Rd. 500 Central Patricia-Pickie Crow	Connell			Kenora	19
Cooksville C.P.R. Overhead	Steel beam	67'-1 3/4" / 120'-11"	Hwy. 5 Toronto-Dundas	Toronto	11-12	I.N. & S.D.S.	Peel	6
Craighurst C.P.R. Overhead	Continuous steel beam	62' 80' 62'	Hwy. 400 Crown Hill-Craighurst	Vespra	39	I	Simcoe	5
Cramahoe Twp. Bridge No. 9 (Biddy Lake Rd.) Underpass	Concrete box girder	50'/119'/80'	Hwy. 401 Toronto-Kinston	Cramahoe	17-18	III	Northumberland	7
Crow Creek Bridge	Timber trestle	15'-3"/3 @ 16' / 13'-3"	Hwy. 11 Lowther-Mattice	McCrea	27	XI	Cochrane	16
Crown Hill Interchange	Concrete rigid frame Hollow box girder	111' 8"	Hwy. 400 Barrie-Coldwater	Vespra	9	I	Simcoe	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Dodd's Creek East Bridge	Concrete beam (Prestressed)	70'-0"	Hwy. 3 Lambeth-St. Thomas	Southwold	45	N.T.R.	Elgin	2
Dodd's Creek West Bridge	Concrete rigid frame	63'-10 $\frac{1}{4}$ "	Hwy. 3 Lambeth-St. Thomas	Southwold	45-46	N.T.R.	Elgin	2
Dumfries North Twp. Bridge No. 9 Underpass	Concrete girder	38'/80'/80'/38'	Hwy. 401 A.Y.R.-Hwy. 97	N. Dumfries	36-37	X	Waterloo	2
Elizabethtown Twp. Bridge No. 2 Underpass	Concrete box girder	106'-0"	Hwy. 401 Hwy. 2 Interchange	Elizabethtown	33	I	Leeds	8
Esquesing Twp. Bridge No. 5 (Hwy. 25 Interchange) Underpass	Concrete rigid frame	2 @ 69'-0"	Hwy. 401	Esquesing	2	II-III	Halton	6
Haldimand Twp. Bridge No. 6 Underpass	Concrete girder	60'/105'/60'	Hwy. 401 Grafton-Colborne	Haldimand	28-29	I	Northumber-land	7
Haldimand Twp. Bridge No. 7 (Grafton Creek Bridge)	Concrete Barrel Arch	30'-0"	Hwy. 401 Grafton-Colborne	Haldimand	27	I	Northumber-land	7
Haldimand Twp. Bridge No. 10 Underpass	Concrete box girder	51'-9"/117'-6"/63'-9"	Hwy. 401 Grafton-Colborne	Haldimand	22	I	Northumber-land	7
Haldimand Twp. Br. No. 14 (Shelter Valley Creek)	Concrete barrel arch	50'-0"	Hwy. 401 Grafton-Colborne	Haldimand	14	I	Northumber-land	7
Haldimand Twp. Br. No. 15 (Shelter Valley Co. Road)	Concrete barrel arch	50'-0"	Hwy. 401 Grafton-Colborne	Haldimand	14	I	Northumber-land	7
Haldimand Twp. Br. No. 17	Concrete rigid frame	34'-0"	Hwy. 401 Grafton-Brighton	Haldimand	11	I	Northumber-land	7
Haldimand Twp. Br. No. 20 Overpass	Concrete rigid frame	34'-0"	Hwy. 401 Grafton-Brighton	Haldimand	6-7	I	Northumber-land	7
Hamilton Twp. Bridge No. 9 (Ontario St.) Underpass	Concrete rigid frame box girder	102'-0 $\frac{3}{4}$ "	Hwy. 401 Hwy. 28-Hwy. 45	Hamilton	18-19	I	Northumber-land	7
Hamilton Twp. Br. No. 10 (Coburg Creek)	Steel plate girder	35'/50'/35'	Hwy. 401 Port Hope-Coburg	Hamilton	17	I	Northumber-land	7
Hamilton Twp. Br. No. 13 Underpass	Concrete box girder	69'-6'/102'/44'	Hwy. 401 Coburg Grafton	Hamilton	10	I	Northumber-land	7
Harris Creek Culvert	Concrete barrel arch	60'	Hwy. 69 (T.C.H.) Sudbury-Parry Sound	Wallbridge	36	II	Parry Sound	17
Hope Twp. Bridge No. 8 Underpass	Prestressed beam	102'-9"	Hwy. 401 Newtonville-Pt. Hope	Hope	18-19	II	Durham	7

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Hope Twp. Bridge No. 11 Overpass	Concrete rigid frame	78'-1"	Hwy. 401 & 2 Morrish-Port Hope	Hope	11	II	Durham	7
Hope Twp. Bridge No. 13 Underpass	Concrete rigid frame	104'-3"	Hwy. 401 Hwy. 2-Hwy. 28	Hope	8-9	II	Durham	7
Hope Twp. Bridge No. 15 (Choate Rd.) Overpass	Concrete girder	56'-6"/78' / 56'-6"	Hwy. 401 Hwy. 2-Hwy. 28	Hope	5	II	Durham	7
Hope Twp. Bridge No. 16 (Gataska River) Underpass	Simple steel girder (prestressed deck)	66'-7"/106' / 66'-7"	Hwy. 401 Hwy. 2-Hwy. 28	Hope	4	II	Durham	7
Hope Twp. Bridge No. 18 Underpass	Concrete box girder	65'-10"/129' / 65'-2"	Hwy. 401 Hwy. 2-Hwy. 45	Hope	5	II	Durham	7
Huntsville S. C.N.R. Overhead	Continuous steel girder	59'-77'-59'	Hwy. 11 Huntsville By-pass	Chaffey	8	I	Muskoka	11
Indian Point Bridge	Bailey Bridge	120'	Hwy. 540 Little Current Meldrum	Gordon	24	I	Manitoulin	17
Kashawagama Lake Br. (Alsaw Bridge)	Steel beam	72'	Hwy. 121 Minden-Haliburton	Minden	27	VII	Haliburton	11
Kettle Creek Bridge	Prestressed concrete beam	63'-9 1/2" / 74' / 74' / 63'-9 1/2"	Hwy. 3 Lambeth-St. Thomas	Yarmouth	45	N.T.R.	Elgin	2
Kingston Twp. Br. No. 9 (Collins Creek)	Concrete rigid frame	30'	Hwy. 401 Hwy. 38-Odessa	Kingston	9-10	IV	Frontenac	8
Kirkwood Ave. Bridge No. 6 Overpass	Steel beam	76'-10"	Ottawa Queensway	Gloucester			Carleton	9
Kraft Creek Bridge	Timber trestle comp. deck	17'-3" / 20' / 20' / 20' / 17'-3"	Hwy. 629 Timmins Airport Rd.	Mountjoy	3	V	Cochrane	14
Little Rouge Creek Bridge	Concrete rigid frame	80'-0"	Hwy. 48 Hwy. 7-Hwy. 47	Markham	23	VII-VIII	York	6
Long Branch C.N.R. Overhead	Steel, plate girder	63'-0"	Hwy. 27	Etobicoke	10-11	I	York	6
Law River Bridge	Crossed timber	26'	Hwy. 509, Sawantlake Central Patricia	Unsurveyed Territory			Thunder Bay	19
Macnetawan River Bridge	Concrete arch (C.R.I. approaches)	40' 00' 40'	Hwy. 69 (T.C.H.) Sudbury-Parry Sound	Wallbridge	36	XVII	Parry Sound	17
Maxwell Creek Bridge	Concrete rigid frame	2 @ 35'	Hwy. 40 Chatham-Sarnia	Chatham- Dover	1 & 24	XIV	Kent	1

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Medway River Bridge	Steel beam	71'-9"/72'-5" / 71'-9"	Hwy. 22 Lobo-London	London	20	IV-V	Middlesex	2
Mississippi River Bridge (Carleton Place)	Continuous plate girder	20'/90'/90' / 90'/70'	Hwy. 15 (T.C.H.) Ottawa Perth	Beckwith	11	XI-XIII	Lanark	9
North Monaghan Twp. C.P.R. Overhead	Steel beam	60'-6"/61' / 60'-6"	Peterboro By-pass Hwy. 28-Hwy. 7	N. Monaghan	8	X-XI	Peterboro	7
Montcalm Creek Bridge	Laminated timber trestle-comp. deck	2 @ 13'-3" / 3 @ 16'-0"	Hwy. 11 Opasatika-Lowther	Idington-McGrey	10	IX	Cochrane	16
Montreal Road Bridge	Plate girder	60'/96'/60'	Hwy. 17A (T.C.H.) Quebec border-Ottawa	Gloucester	15	1 O.R.F.	Carleton	9
Moon River Bridge	Steel thru. truss	35'/248'-6"/35'	Hwy. 103 (T.C.H.) Port Severn-Portes Bay	Gibson	13	XIV	Muskoka	11
Mud Creek Bridge	Steel beam	73'-0"	Hwy. 19 — Woodstock — 8.7 miles north	E. Zorra	15	XI-XII	Oxford	3
Mud Creek Bridge	Steel beam	60'-0"	Dev. Road 384 Shelburne-Mt. Forest	Melancthon-E. Luther	11 & 28	XI-XIV	Dufferin	5
Nagamisis Lake Narrows (Horn Payne Road)	Cresoted timber	30'/30'/30'	Hwy. 631 Hwy. 11-Hornpayne	Frost	...	...	Algoma	16
Nassagaweya Twp. Br. No. 1 Overpass	Prestressed concrete girder	2 @ 59'-0"	Hwy. 401 Toronto-London	Esquesing-Nassagaweya	5	I & VIII	Halton	4
Nassagaweya Twp. Br. No. 5 Overpass	Concrete rigid frame	37'-3"	Hwy. 401 Toronto-London	Nassagaweya	5	V-VI	Halton	4
Nassagaweya Twp. Br. No. 6 Overpass	Concrete rigid frame	50'-0"	Hwy. 401 Toronto-London	Nassagaweya	5	V	Halton	4
Nassagaweya Twp. Br. No. 7 Overpass	Concrete rigid frame	36'-3"	Hwy. 401 Toronto-London	Nassagaweya	5	IV	Halton	4
Nassagaweya Twp. Br. No. 9 (Campbellville Interchange) Underpass	Concrete rigid frame	2 @ 67'-0"	Hwy. 401 Toronto-London	Nassagaweya	7	III-IV	Halton	4
Nassagaweya Twp. Bridge No. 11 Overpass	Concrete rigid frame	55'-6"	Hwy. 401 Toronto-London	Nassagaweya	8	II	Halton	4
Nassagaweya Twp. Bridge No. 13 Underpass	Concrete rigid frame	2 @ 60'-1"	Hwy. 401 Toronto-London	Nassagaweya	9	I-II	Halton	4
Nicholas St. Bridge No. 34 (Mann Ave.) Overpass	Steel beam	82'-6"	Ottawa Queensway	Gloucester	...	...	Carleton	9

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Nottawasaga River Bridge at Angus	Steel low truss	162'-9" 32' approaches	Hwy. 90 Angus-Barrie	Essai Sunnidale	32 23	IV I	Simcoe	5
Ouden-Applewood Ped. Overpass	Prestressed beams	12'-6" 54'-2" 102' 3' 54'- 2' 10' 9"	Q.E.W. Toronto Oakville	Toronto	—	—	Peel	6
Onaping River Bridge (Levack Bridge)	Steel plate girder	75'/100'/60'	Hwy. 544 Sudbury-Levack	Levac	9	I	Sudbury	17
Orillia By-pass Interchange Underpass	Concrete rigid frame	28' 0"	Hwy. 11	Orillia South	3	VI	Simcoe	11
Osse R. Bridge	Concrete rigid frame	50'-0"	Hwy. 45 Rosenearth-Norwood	Asphodel	17	VIII IX	Peterboro	7
Oxford West Twp. Br. No. 3 (Norwich Rd.) Underpass	Concrete rigid frame	94' 6"	Hwy. 401 Twp. Road-Sweaburg	Oxford West	4-5	II	Oxford	2
Paves Platt R. Bridge	Steel beam	6 @ 40'-0"	Hwy. 17 (T.C.H.) Nipigon-Rosport	No. 86	—	—	Thunder Bay	19
Paves Platt Creek Bridge (Otonabee Twp. C.N.R. Overhead)	Steel beam	65' 0"	Hwy. 17 (T.C.H.) Nipigon-Rosport	No. 86	—	—	Thunder Bay	19
Peterboro By-pass Overpass	Steel beam	51'/52'-6'/51'	Peterboro By-pass	Otonabee	26	XII	Peterboro	7
Pic Twp. Flume Bridge	Crossed timber	26' Heron Bay Rd.	Hwy. 627	Pic	—	—	Thunder Bay	19
Puslinch Twp. Bridge No. 6 Underpass	Concrete rigid frame	2 @ 64' 3"	Hwy. 401 Toronto-London	Puslinch	33	IX-X	Wellington	4
Puslinch Twp. Bridge No. 10 Underpass	Concrete box girder	38'/71'/71'/38'	Hwy. 401 Toronto-London	Puslinch	28-29	VII-VIII	Wellington	4
Puslinch Twp. Bridge No. 19 Underpass	Concrete box girder	38'/60'-9'/ 60' 9' 38'	Hwy. 401 Toronto-London	Puslinch	5-6	II	Wellington	4
Rosport C.P.R. Overhead at Rosport	Steel beam	3 @ 65'	Hwy. 17 (T.C.H.)	No. 86	—	—	Thunder Bay	19
Saugeen River Bridge at Southampton	Continuous steel deck truss	130' 182' 130'	Hwy. 21 Southampton-Owen Sound	Saugeen	—	—	Bruce	5
Sharpes Creek Bridge	Concrete rigid frame	76'-0"	Hwy. 17 North Bay-Pembroke	Bonfield	31	IX	Nipissing	13
Shawanaga River Bridge	Steel plate girder	120' 0"	Hwy. 69 (T.C.H.) Nobel Britt	Shawanaga	15	VIII	Parry Sound	11

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Shooks Hill Bridge No. 1 Overpass	Continuous concrete slab	32'/43'/32'	Q.E.W. Toronto-Oakville	Toronto	31	I-II S.D.S.	Peel	6
Shooks Hill Bridge No. 2 Underpass	Concrete rigid frame Box girder	102'-6"	Q.E.W. Toronto-Oakville	Toronto	30	I-II S.D.S.	Peel	6
Seguin River Bridge	Steel truss	2 @ 90'-9"	Hwy. 69 (old) Town of Parry Sound	McDougall	....	....	Parry Sound	11
Sideburned Lake	Steel beam, concrete slab	53'-6"	Hwy. 129 Thessalon-Chapleau	Chapleau	11-12	II	Sudbury	18
Smith Twp. C.N.R. Overhead	Concrete Rigid frame	3 @ 40'-0"	Hwy. 133 (T.C.H.)	Smith	1	II	Peterboro	7
St. Laurent Blvd. Br. No. 33 Overpass	Concrete Rigid frame	83'-2"	Ottawa Queensway	Gloucester	....	....	Carleton	9
Talbot R. Bridge	Concrete rigid frame	70'	Hwy. 12 (T.C.H.)	Thora-Mara	11, 11	X, B	Ontario	7
Thames River Bridge at Delaware	Steel plate girder	93'-6"/94'-3"/94'-3"/93'-6"	Hwy. 2 Delaware-Delaware W.	Delaware-Caradoc	3, 24	D, Range I	Middlesex	2
Thurlow Twp. C.N.R. Overhead at Corbyville	Concrete rigid frame	47'/49'/47'	Hwy. 37 Corbyville N.-Belville	Thurlow	8-9	III	Hastings	8
Toronto Twp. Bridge No. 16 (Streetsville Interchange) Underpass	Continuous haunched slab	38'/71'/71'/38'	Hwy. 401 Hwy. 10-Hwy. 25	Toronto	10	IV-V W.	Peel	6
Trafalgar Twp. Bridge No. 1 Underpass	Continuous concrete girder	51'/73'-6"/73'-6"/51'	Hwy. 401 Hwy. 10-Hwy. 25	Trafalgar	14	VI	Halton	6
Trafalgar Twp. 3rd Line Overpass	Concrete rigid frame	34'-0"	Q.E.W. Oakville-Burlington	Trafalgar	25-26	II, III S.D.S.	Halton	6
Trafalgar Twp. 4th Line Underpass	Concrete box girder	122'-0"	Q.E.W. Oakville-Burlington	Trafalgar	20-21	II-III S.D.S.	Halton	6
Trafalgar Twp. Underpass (West of Bronte Creek)	Concrete rigid frame box girder	118' 0"	Q.E.W. Oakville	Trafalgar	32	II, III S.D.S.	Halton	6
Tremblay Rd. Bridge No. 32 W.B. Overpass	Composite steel beam	80'-9"/91'-9"	Ottawa Queensway	Gloucester	....	....	Carleton	9
Vermillion R. Bridge (Larchwood Bridge)	Steel beam	70'/60'	Hwy. 544 Sudbury-Levaack	Balfour	12	IV	Sudbury	17
Vernon Narrows	Continuous steel girder	70'-70'-70'-86'-112'-86' 70'-70'-70'	Hwy. 11 Huntsville By-pass	Chaffey	9	II	Muskoka	11

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Venne River Bridge at Markstay	Composite steel beam	70'	Hwy. 606 Hwy. 17-Markstay	Hagar	13	III	Sudbury	17
Wabigoon River Bridge	Steel plate girder	63'-6"	Hwy. 105	Wabigoon	2	III	Kenora	20
Wabikoba Creek Bridge	Continuous Steel beam	46'-58'-46'	Hwy. 17 (T.C.H.) Marathon White River	No. 73	...	...	Thunder Bay	56-1
Walkers Road Underpass	Concrete rigid frame box girder	114'-0"	Q.E.W. Oakville-Burlington	Nelson	10-11	II-III	Halton	6
Westminster Twp. Br. No. 13 (White Oak Side Road) Underpass	Concrete rigid frame box girder	94'-5"	Hwy. 401 6 miles south of London White Oak Side Road	Westminster	20	V	Middlesex	2
White River West Crossing at Brenner River	Steel plate girder	60'-90'-60'	Hwy. 17 (T.C.H.) Marathon-White River	No. 70	...	...	Thunder Bay	56-1
Wicklow River Bridge	Steel beam	2 @ 29'-7" 6 @ 30'-3" 1 @ 44'-3"	Hwy. 11 Cochrane-South	Hanna	M	V	Cochrane	16
Winnipeg River Br. E. Br. (Town of Kenora)	Steel plate girder	130'-170' 130'	Hwy. 17 (T.C.H.)	Pellatt-Gaffrey			Kenora	20
Wolf River Bridge	Prestressed concrete beam	104'-0"	Hwy. 17 (T.C.H.) Port Arthur-Nipigon	Dorion	12	II	Thunder Bay	19

APPENDIX No. 5
COUNTIES
Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,133.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.91	17,094,520.86
TOTALS TO DATE.....		\$416,774,569.39	\$214,200,225.50

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1959
Provincial Subsidies on 1959 Expenditures Being Paid in the 1959-60 Fiscal Year

COUNTY	YEAR OF ESTABLISHMENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES TO END OF 1959	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB-URBAN ROADS	TOTAL		
Brant	1917	91.70	35.00	126.70	\$ 6,811,397.35	\$ 3,646,016.19
Bruce	1917	310.21	.....	310.21	10,112,388.53	5,312,098.26
Carleton	1910	144.83	107.40	252.23	18,621,146.33	9,616,026.19
Dufferin	1918	174.70	.....	174.70	4,400,264.72	2,212,554.47
Elgin	1917	246.42	30.00	276.42	9,713,460.14	5,033,939.74
Essex	1916	209.83	53.00	262.83	16,817,947.15	8,724,273.37
Frontenac	1907	121.90	43.60	165.50	4,753,181.96	2,394,618.54
Grey	1918	295.52	34.70	330.22	11,069,020.82	5,652,928.04
Haldimand	1912	163.64	.....	163.64	8,940,828.97	4,512,428.52
Halton	1907	148.47	.....	148.47	7,295,866.58	3,663,711.09
Hastings	1904	253.79	14.50	268.29	7,895,407.57	3,895,182.32
Huron	1917	390.80	.....	390.80	11,097,068.30	5,928,113.31
Kent	1917	383.58	24.35	407.93	16,934,790.66	8,967,120.28
Lambton	1918	247.37	23.76	271.13	10,872,842.45	5,705,327.11
Lanark	1903	235.90	6.00	241.90	6,727,529.56	3,420,017.17
Leeds and Grenville....	1910	314.08	35.90	349.98	9,359,648.33	4,617,819.05
Lennox and Addington	1906	174.40	.....	174.40	6,070,200.53	3,124,931.47
Lincoln	1904	167.91	23.55	191.46	10,605,191.34	5,241,765.56
Middlesex	1906	445.70	64.27	509.97	19,447,926.73	10,183,220.85
Norfolk	1917	242.83	.....	242.83	10,908,504.66	5,572,724.04
Northumberland and Durham	1918	286.95	12.75	299.70	10,058,971.92	5,192,483.15
Ontario	1918	244.97	21.70	266.67	8,656,233.14	4,480,118.07
Oxford	1904	199.90	15.25	215.15	10,795,250.61	5,436,633.99
Peel	1907	152.77	.....	152.77	13,089,044.78	6,841,530.80
Perth	1907	180.70	23.55	204.25	7,263,215.48	3,712,588.70
Peterborough	1919	130.30	70.00	200.30	5,634,276.76	3,015,906.78
Prescott and Russell..	1917	323.90	.....	323.90	11,557,345.16	5,784,633.52
Prince Edward	1907	187.83	.....	187.83	5,741,240.18	2,846,348.90
Renfrew	1918	222.97	.....	222.97	9,741,393.56	5,070,212.33
Simcoe	1903	241.30	19.10	260.40	11,984,511.16	6,004,624.58
Stormont, Dundas and Glengarry	1917	397.24	61.00	458.24	13,842,394.68	6,990,488.70
Victoria	1917	234.68	.....	234.68	6,786,233.93	3,515,906.57
Waterloo	1908	103.20	112.10	215.30	12,702,412.45	6,642,419.99
Welland	1912	137.35	30.00	167.35	14,115,896.52	7,233,255.25
Wellington	1903	350.75	38.40	389.15	14,657,547.85	7,698,326.63
Wentworth	1903	58.66	123.80	182.46	13,901,624.45	6,968,377.65
York	1911	.....	190.36	190.36	37,792,364.08	19,341,554.32
TOTALS		8,217.05	1,214.04	9,431.09	\$416,774,569.39	\$214,200,225.50

APPENDIX
SUMMARY OF COUNTY
(Government Subsidies Paid)

NAME OF COUNTY	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 221,016.28	\$ 72,888.57	\$ 129,543.30	\$ 10,052.67
Bruce.....	372,451.60	116,988.46	190,117.51	5,606.22
Carleton (Ottawa Sub.).....	366,554.76	77,483.20	172,129.63	5,100.20
Carleton	244,739.84	98,173.77	90,614.39	4,303.36
Dufferin.....	116,600.00	96,125.83	28,668.70	286.49
Elgin.....	376,007.22	187,236.20	186,115.71	25,715.34
Essex.....	2,027,784.68	353,571.05	194,945.48	14,006.03
Frontenac.....	131,894.95	98,399.08	82,085.71	2,186.41
Grey.....	163,452.25	290,533.36	87,485.17	5,125.22
Haldimand.....	437,844.01	101,360.06	51,314.61	519.36
Halton.....	367,892.78	173,257.78	78,869.12	3,708.83
Hastings.....	91,257.99	186,238.43	25,150.04	5,044.85
Huron.....	435,573.87	162,424.79	118,360.65	13,132.32
Kent.....	632,578.59	177,990.52	126,905.22	17,110.49
Lambton.....	852,098.66	177,982.08	380,820.92	4,772.68
Lanark.....	156,482.09	118,138.61	15,847.69	2,349.38
Leeds and Grenville.....	185,650.94	206,532.92	92,968.74	13,915.41
Lennox and Addington.....	110,940.34	103,166.01	30,445.30	2,432.77
Lincoln.....	382,586.97	230,893.71	119,955.37	3,089.27
Middlesex.....	1,014,989.37	304,553.13	434,347.03	16,615.22
Norfolk.....	508,894.42	228,983.17	64,920.77	8,938.12
Northumberland and Durham.....	596,270.66	118,146.14	65,317.00	1,355.66
Ontario.....	413,303.65	181,561.18	137,036.35	12,046.15
Oxford.....	596,746.43	205,540.36	147,821.35	4,859.49
Peel.....	1,218,828.85	203,650.44	529,334.59	2,092.04
Perth.....	269,352.61	177,876.45	26,354.07	1,425.24
Peterborough.....	239,032.78	73,458.45	46,562.22	5,405.70
Prescott and Russell.....	310,326.86	156,581.92	63,842.49	9,875.77
Prince Edward.....	216,173.57	100,415.53	15,576.44	867.75
Renfrew.....	115,190.93	124,015.98	92,504.88	4,133.49
Simcoe.....	319,854.51	302,385.95	27,810.62	2,301.00
Stormont, Dundas and Glengarry.....	299,178.80	137,042.34	30,832.07	3,414.66
Victoria.....	185,145.98	128,434.13	18,586.66	4,789.29
Waterloo.....	621,237.08	151,588.14	81,941.36	7,264.43
Welland.....	682,428.31	175,209.57	73,080.51	11,926.54
Wellington.....	332,808.56	434,029.75	36,577.75	4,451.64
Wentworth.....	661,033.00	292,540.81	20,286.98	12,778.02
York.....	1,226,123.03	257,446.86	144,937.48	5,256.49
TOTALS.....	\$17,500,327.22	\$ 6,782,844.73	\$ 4,260,013.88	\$ 258,254.00

SUMMARY OF METROPOLITAN

Metropolitan Toronto.....	\$12,255,893.68	\$ 1,288,114.04	\$ 3,103,028.70	\$ 195,920.35
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No. 7

ROAD EXPENDITURES—1959

in 1959-1960 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	APPROVED EXPENDITURE			GOVERNMENT SUBSIDY 50% AND 80%
	CONSTRUCTION	MAINTENANCE	TOTAL	
\$ 37,693.65	\$ 350,559.58	\$ 120,634.89	\$ 471,194.47	\$ 277,476.03
96,427.20	562,569.11	219,021.88	781,590.99	449,512.62
78,647.17	538,684.39	161,230.57	699,914.96	403,126.43
30,769.25	335,354.23	133,246.38	468,600.61	262,775.64
68,000.00	145,268.70	164,412.32	309,681.02	163,527.07
31,415.64	562,122.93	244,367.18	806,490.11	466,794.37
27,995.07	2,222,730.16	395,572.15	2,618,302.31	1,371,836.61
51,933.85	213,980.66	152,519.34	366,500.00	208,531.63
165,500.00	250,937.42	461,158.58	712,096.00	383,831.12
5,838.38	489,158.62	107,717.80	596,876.42	313,988.40
77,228.24	446,761.90	254,194.85	700,956.75	375,251.76
55,437.69	116,408.03	246,720.97	363,129.00	190,622.97
128,200.73	553,934.52	303,757.84	857,692.36	468,294.07
9,331.63	759,483.81	204,432.64	963,916.45	525,162.94
30,541.15	1,232,919.58	213,295.91	1,446,215.49	838,785.83
45,627.34	172,329.78	166,115.33	338,445.11	174,681.68
63,541.73	278,619.68	283,990.06	562,609.74	313,370.11
31,797.99	141,385.64	137,396.77	278,782.41	149,254.63
55,041.65	502,542.34	289,024.63	791,566.97	432,696.88
73,970.19	1,449,336.40	395,138.54	1,844,474.94	1,057,526.14
39,226.14	573,815.19	277,147.43	850,962.62	447,638.98
89,584.35	661,587.66	209,086.15	870,673.81	455,338.70
77,289.43	550,340.00	270,896.76	821,236.76	455,343.13
61,979.09	744,567.78	272,378.94	1,016,946.72	554,277.61
101,105.36	1,748,163.44	306,847.84	2,055,011.28	1,186,933.63
41,643.65	295,706.68	220,945.34	516,652.02	266,659.80
62,662.00	285,595.00	141,526.15	427,121.15	229,150.95
90,611.27	374,169.35	257,068.96	631,238.31	337,734.64
36,200.03	231,750.01	137,483.31	369,233.32	189,549.92
46,731.94	207,695.81	174,881.41	382,577.22	220,280.12
115,313.05	347,665.13	420,000.00	767,665.13	392,866.05
106,437.05	330,010.87	246,894.05	576,904.92	298,726.48
60,614.80	203,732.64	193,838.22	397,570.86	205,798.22
88,315.02	703,178.44	247,167.59	950,346.03	501,934.74
90,532.46	755,508.82	277,668.57	1,033,177.39	542,090.82
105,387.31	369,386.31	543,868.70	913,255.01	468,936.31
131,812.09	681,319.98	437,130.92	1,118,450.90	569,144.95
166,257.52	1,371,060.51	428,960.87	1,800,021.38	945,068.88
\$2,676,641.11	\$21,760,341.10	\$9,717,739.84	\$31,478,080.94	\$17,094,520.86

ROAD EXPENDITURES—1959

\$1,390,846.32	\$15,358,922.38	\$2,874,880.71	\$18,233,803.09	\$ 9,116,901.55
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APPENDIX No. 8
INCORPORATED TOWNSHIPS
Chronological Summary of Road Expenditure and Provincial Subsidy
Including Improvement Districts and Indian Reserves

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
TOTALS.....		\$429,840,910.43	\$225,207,619.39

NOTE. — 573 Townships, 23 Improvement Districts and 30 Indian Reserves are represented in the above expenditures for 1959.

APPENDIX No. 9
CITIES, TOWNS AND VILLAGES
Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
TOTALS.....		\$238,481,946.55	\$ 93,496,243.82

NOTE. — 30 Cities, 8 Separated Towns, 148 Towns and 154 Villages are represented in the above expenditure for 1959.

APPENDIX No. 10
MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1959
ROADS UNDER LOCAL AUTHORITY

COUNTY	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT CONCRETE BRICK ETC.	TOTAL
Brant.....	1.00	40.22	71.23	23.01	23.84	16.09	175.39
Bruce.....	8.85	51.25	35.73	20.56	14.70	1.94	133.03
Carleton.....	44.16	87.86	55.93	118.17	191.59	.....	497.71
Dufferin.....	2.80	11.90	6.70	.....	9.93	2.70	34.03
Elgin.....	7.90	15.19	14.03	27.00	24.70	3.35	92.17
Essex.....	31.50	59.66	34.42	43.36	190.28	147.34	506.56
Frontenac.....	0.82	.....	17.97	15.90	54.56	0.30	89.55
Grey.....	27.42	38.33	66.07	14.00	12.82	6.00	164.64
Haldimand.....	5.24	17.86	4.60	11.22	16.43	0.34	55.69
Halton.....	9.98	139.42	87.19	14.48	48.86	6.59	306.52
Hastings.....	9.90	19.20	55.60	7.80	12.21	0.13	104.84
Huron.....	2.46	35.91	20.88	37.32	14.55	4.18	115.30
Kent.....	10.54	35.17	34.37	9.96	84.97	18.37	193.38
Lambton.....	3.82	48.85	107.42	32.27	42.48	8.30	243.14
Lanark.....	11.72	13.94	16.10	26.47	30.85	1.00	100.08
Lennox-Addington.....	.....	9.57	13.51	.....	3.29	.....	26.37
Leeds and Grenville.....	16.88	23.45	4.38	28.43	23.38	23.45	119.97
Lincoln.....	2.91	25.90	13.04	28.12	43.83	47.35	161.15
Middlesex.....	8.89	45.17	91.55	71.83	0.08	9.75	227.27
Norfolk.....	2.51	15.19	29.78	18.92	3.65	3.20	73.25
Northumberland and Durham.....	4.25	64.40	54.75	23.50	44.16	5.00	196.06
Ontario.....	9.23	27.49	112.42	54.13	47.14	11.77	262.18
Oxford.....	7.92	25.34	31.91	49.47	17.50	11.66	143.80
Peel.....	0.61	22.71	4.40	27.18	24.53	.....	79.43
Perth.....	15.71	66.00	18.80	16.98	32.69	2.37	152.55
Peterborough.....	.....	25.32	51.09	13.00	32.69	4.37	126.47
Prescott and Russell.....	3.10	6.35	7.00	6.18	9.00	0.50	32.13
Prince Edward.....	.....	0.21	8.91	2.87	8.36	.....	20.35
Renfrew.....	18.85	22.15	25.45	7.55	44.75	0.15	118.90
Simcoe.....	17.69	123.26	64.19	1.31	59.00	7.41	272.86
Stormont, Dundas and Glengarry.....	4.15	44.66	8.30	32.60	23.95	45.41	159.07
Victoria.....	1.00	10.00	37.80	3.40	25.75	.....	77.95
Waterloo.....	26.35	61.34	153.64	41.22	134.25	20.53	437.33
Welland.....	8.15	16.95	48.28	69.36	90.01	8.23	240.98
Wellington.....	12.08	36.59	93.71	24.36	20.94	28.04	215.72
Wentworth.....	2.43	39.39	31.19	115.64	259.81	3.12	451.58
York.....	0.68	42.51	20.79	2.22	24.50	.....	90.70
TOTALS—Counties	341.50	1,368.71	1,553.13	1,039.79	1,746.03	448.94	6,498.10
Metro. Toronto Area	7.86	1.98	9.53	4.55	568.49	25.30	617.71
DISTRICTS							
Algoma.....	5.50	78.14	.....	5.32	37.10	5.10	131.16
Cochrane.....	.....	24.05	22.00	19.80	29.39	1.80	97.04
Kenora.....	9.31	33.67	12.63	0.25	24.29	.....	80.15
Manitoulin.....	5.50	12.20	1.60	1.70	.....	.....	21.00
Muskoka.....	2.88	52.24	28.87	21.92	1.50	3.75	111.16
Nipissing.....	6.45	31.30	25.64	5.48	43.22	1.50	113.59
Parry Sound.....	.....	36.87	4.00	10.50	12.06	.....	63.43
Rainy River.....	5.65	29.05	8.26	3.47	3.57	1.67	51.67
Sudbury.....	6.85	57.49	32.20	20.62	43.80	0.92	161.88
Temiskaming.....	.....	23.25	14.50	14.25	13.75	.....	65.75
Thunder Bay.....	3.01	63.93	93.60	10.73	83.77	15.63	270.67
TOTALS—Districts	45.15	442.19	243.30	114.04	292.45	30.37	1,167.50
GRAND TOTALS.....	394.51	1,812.88	1,805.96	1,158.38	2,606.97	504.61	8,283.31

APPENDIX

MILEAGE OF ROAD SURFACES

COUNTY	COUNTY ROADS				
	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE
Brant.....		32.95	4.25	89.50	.....
Bruce.....		150.57		111.54	48.10
Carleton.....		76.65	24.50	37.91	113.17
Dufferin.....		156.85		4.65	13.00
Elgin.....		111.90	11.87	11.70	140.95
Essex.....		83.03	49.98	48.63	66.22
Frontenac.....		78.75	71.75	15.00	.....
Grey.....		292.45		25.45	7.00
Haldimand.....		47.67	109.85	.....	6.12
Halton.....		61.95	37.85	7.55	40.12
Hastings.....		177.17	50.75	16.35	21.72
Huron.....		214.30		162.25	14.25
Kent.....		92.59		6.06	300.76
Lambton.....	0.67	134.35		57.90	76.81
Lanark.....		157.83	3.40	64.42	16.25
Lennox and Addington.....		42.00	58.70	17.00	56.70
Leeds and Grenville.....		155.50	9.50	118.64	65.54
Lincoln.....	0.75	7.58	95.92	65.42	11.95
Middlesex.....		228.31		222.37	25.75
Norfolk.....		19.72		222.30	.....
Northumberland and Durham.....		193.55	2.05	63.90	39.60
Ontario.....		96.10	21.80	107.69	38.27
Oxford.....		87.75		115.60	.....
Peel.....		59.52	25.03	11.73	52.26
Perth.....		112.70		76.30	15.25
Peterborough.....		148.70		45.30	6.30
Prescott and Russell.....	2.95	194.82	31.59	55.30	39.24
Prince Edward.....		92.53	33.87	45.48	7.35
Renfrew.....		67.96		92.06	61.60
Simcoe.....		178.85	1.10	25.05	55.40
Stormont, Dundas and Glengarry.....		148.33	0.90	203.94	104.47
Victoria.....		124.30		100.03	10.35
Waterloo.....		63.00	97.70	29.80	.....
Welland.....		9.40	72.35	41.90	42.50
Wellington.....		169.95	105.15	85.65	28.40
Wentworth.....		9.00	43.23	129.13	1.10
York.....		29.85	22.72	56.74	80.55
TOTALS — Counties.....	4.37	4,108.43	985.81	2,590.24	1,607.05
Metropolitan Toronto Area.....	4.54	2.30	12.71	5.30	265.89
DISTRICTS					
Algoma.....					
Cochrane.....					
Haliburton.....					
Kenora.....					
Manitoulin.....					
Muskoka.....					
Nipissing.....					
Parry Sound.....					
Rainy River.....					
Sudbury.....					
Temiskaming.....					
Thunder Bay.....					
TOTALS — Districts.....					
Unorganized Townships.....					
GRAND TOTALS.....	8.91	4,110.73	998.52	2,595.54	1,872.94

No. 11
AT THE END OF 1959

INCORPORATED TOWNSHIP ROADS

CEMENT, CON- CRETE	TOTAL	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT, CON- CRETE	TOTAL	
.....	126.70	41.70	458.30	30.70	6.75	.....	.....	537.45
.....	310.21	70.50	1,779.00	6.75	3.50	9.00	.....	1,868.75
.....	252.23	160.89	839.16	17.80	8.50	28.50	.....	1,054.85
0.20	174.70	70.00	699.00	.....	.....	.....	.....	769.00
.....	276.42	2.04	868.99	13.00	.....	.....	.....	884.03
14.97	262.83	31.57	866.38	112.56	6.87	41.95	35.92	1,095.25	
.....	165.50	309.85	607.64	5.70	7.70	2.30	.....	933.19
5.32	330.22	111.12	2,034.83	9.25	6.75	2.20	.....	2,164.15
.....	163.64	60.90	493.92	54.55	3.90	6.75	.....	620.02
1.00	148.47	3.50	316.99	85.19	.....	4.86	1.25	411.79
2.30	268.29	319.00	1,179.70	11.60	5.00	1.68	.....	1,516.98
.....	390.80	75.25	1,486.45	2.75	20.75	7.40	1.00	1,593.60	
8.52	407.93	29.20	1,215.90	.....	0.40	8.03	0.65	1,254.18
1.40	271.13	167.71	1,185.67	7.30	37.89	0.98	.....	1,399.55
.....	241.90	488.40	511.25	.....	7.20	.....	.....	1,006.85
.....	174.40	230.70	408.56	7.75	0.50	0.54	.....	648.05
0.80	349.98	499.25	763.79	.....	37.60	24.30	.....	1,324.94
9.84	191.46	93.76	427.01	60.53	29.95	5.49	4.12	620.86	
33.54	509.97	69.94	1,574.83	65.84	7.27	1.34	0.40	1,719.62	
0.81	242.83	108.45	750.69	28.78	117.46	.....	.....	1,005.38
0.60	299.70	274.00	1,819.10	79.00	96.10	3.25	0.25	2,271.70	
2.81	266.67	213.30	824.46	.....	21.16	17.20	.....	1,076.12
11.80	215.15	.....	1,076.20	11.73	3.87	.....	.....	1,091.80
4.23	152.77	52.17	534.14	116.14	.....	28.29	.....	730.74
.....	204.25	29.75	1,013.00	.....	0.75	0.25	.....	1,043.75
.....	200.30	160.00	899.70	37.50	2.00	2.00	0.50	1,101.70	
.....	323.90	467.60	581.15	1.10	0.50	.....	.....	1,050.35
8.60	187.83	26.60	332.70	49.00	6.00	.....	1.94	416.24
1.35	222.97	1,012.81	673.41	1.50	3.30	7.65	.....	1,698.67
.....	260.40	269.28	1,830.47	19.05	1.80	37.60	.....	2,158.20
0.60	458.24	494.80	849.35	1.20	9.65	.....	.....	1,355.00
.....	234.68	167.30	744.10	.....	.....	.....	.....	911.40
24.80	215.30	8.75	572.00	18.20	4.00	3.00	1.45	607.40	
1.20	167.35	249.80	445.66	217.18	49.32	17.77	.....	979.73
.....	389.15	87.85	1,150.95	.....	1.80	.....	0.50	1,241.10
.....	182.46	26.35	493.45	43.55	13.22	.....	.....	576.57
0.50	190.36	33.85	834.75	14.50	15.60	57.57	.....	956.27
135.19	9,431.09	6,517.94	33,142.65	1,129.70	537.06	319.90	47.98	41,695.23	
ROADS	6.27	297.01	94.04	93.80	511.76	117.36	594.11	8.43	1,419.50
.....	.....	182.25	644.99	.....	8.32	55.92	5.10	896.58
.....	.....	57.75	540.30	8.00	13.50	3.70	.....	623.25
.....	.....	192.35	236.20	.....	27.00	.....	.....	455.55
.....	.....	28.00	180.69	.....	.....	.....	.....	208.69
.....	.....	67.11	448.52	6.00	1.40	.....	.....	523.03
.....	.....	337.35	470.79	.....	79.21	.....	.....	887.35
.....	.....	103.70	565.80	.....	21.95	5.00	.....	696.45
.....	.....	82.30	879.00	1.50	38.50	.....	.....	1,001.30
.....	.....	86.00	499.20	.....	0.90	.....	.....	586.10
.....	.....	106.24	583.19	60.23	29.72	29.32	0.03	808.73
.....	.....	84.10	533.05	2.00	21.00	.....	.....	640.15
.....	.....	59.85	632.12	30.65	46.69	22.35	0.35	792.01
.....	.....	1,387.00	6,213.85	108.38	288.19	116.29	5.48	8,119.19
.....	.....	1,192.41	3,521.61	.....	3.00	.....	.....	4,717.02
141.46	9,728.10	9,191.39	42,971.91	1,749.84	945.61	1,030.30	61.89	55,950.94	

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1959

Approved 1959 Expenditures by Cities, Towns and Villages under Part VII of the Highway Improvement Act

MUNICIPAL ROAD DISTRICT No.	CITIES (30) SEP. TOWNS (8)	APPROVED EXPENDITURES — 1959			GOVERNMENT SUBSIDY 33 1/3%, 50% AND 80%
		TOWNS (148)	VILLAGES (154)	URBAN TOTAL (340)	
1	\$ 1,679,886.64	\$ 388,019.99	\$ 112,430.04	\$ 2,180,336.67	\$ 827,066.68
2	1,052,141.74	300,187.51	107,050.86	1,459,380.11	562,871.83
3	2,157,805.73	434,948.29	111,673.22	2,704,427.24	1,014,395.56
4	4,841,991.01	811,439.42	117,097.39	5,770,527.82	2,123,460.01
5	129,848.02	248,611.47	68,606.07	447,065.56	204,539.00
6	354,970.00	1,957,493.75	257,388.13	2,509,851.88	1,277,971.22
6 M.T.A.	3,992,760.08	522,656.84	188,160.99	4,703,577.91	1,747,494.13
7	544,408.75	298,912.49	81,407.45	924,728.69	381,540.41
8	1,020,908.19	46,840.94	131,072.29	1,198,821.42	459,310.64
9	4,434,567.85	310,477.46	142,151.68	4,887,196.99	1,718,707.82
10	1,188,746.33	283,664.46	77,126.37	360,790.83	188,009.17
11	53,580.31	387,444.98	83,007.49	1,659,198.80	643,674.97
12	156,943.19	53,580.31	21,405.77	74,986.08	40,302.77
13	.....	107,345.85	8,781.06	273,070.10	112,258.57
14	.....	378,532.12	812.35	379,344.47	194,368.17
16	.....	202,493.79	.....	202,493.79	101,917.91
17	1,050,292.74	306,689.59	.....	1,356,982.33	506,746.89
18	632,709.48	74,317.39	2,659.77	709,686.64	251,448.01
19	638,605.45	11,529.40	.....	650,134.85	220,689.34
20	.....	378,145.67	.....	378,145.67	197,286.44
TOTALS.....	\$23,876,585.20	\$ 7,503,331.72	\$ 1,510,830.93	\$32,890,747.85	\$12,774,059.54

APPENDIX No. 13

HIGHWAY MILEAGES OF PAVEMENT TYPES IN ONTARIO

Fiscal Year Ending March 31, 1960

The King's Highways mileages as tabulated by the Statistics & Economics Section from the Inventory Sheets indicate an increase on the King's Highway of approximately 220 miles. This difference can be accounted for by new mileage related to:

(1) New Highways (including the Gap and Highway 401).....	63 miles
(2) By-passes.....	44 miles
(3) Relocations.....	43 miles
(4) Assumptions and Redesignations	53 miles
	<u>203 miles</u>

In addition it has been noted that sections of highway which were by-passed due to re-alignment, and not reported in the past, were found to be fully assumed by the Department. This mileage would contribute to the difference of mileage.

Differences in King's Highway mileages reported in the Highway Districts reflect a normal growth with the exception of Districts 17, 18 and 19. These can, to the greatest extent, be accounted for by the changes in the District Boundaries and the inclusion of the "Gap" as indicated.

HWY. DISTRICT	1959 MILEAGE	1960 MILEAGE	DIFFERENCE	REMARKS	DIFFERENCE
17	250	343	+93	Gained 82 miles from District 18	+11 + —
18	417	474	+57	Gained 120 miles (TCH — "Gap"). Lost 82 miles to District 17	+19 + —
19	655	583	—72	Lost 65 miles to District 18	— 7 + —

A rough check of the mileages was also made of these districts by comparing the Road Map Mileage and the mileage indicated on the Inventory Sheets. These are noted.

HWY. DISTRICT	ROAD MAP	INVENTORY SHEETS	DIFFERENCE
17	330 miles	344 miles	
18	497 miles	474 miles	
19	603 miles	583 miles	
	<u>1,430 miles</u>	<u>1,401 miles</u>	29 miles approx.

Mileage figures for Secondary Highways were somewhat low as reported in the 1959 Annual Report and were updated in Circular 60-053 re-Road Mileages. Total Secondary Road mileage at this time being reported as 2,561.6 miles.

The total as reported by the Statistics & Economics section for the Fiscal year ending March 31st, 1960, is 2,547.2 miles, a difference of + 14.4 miles +. This difference can for the most part be accounted for as follows:

1. ....Redesignations:	Sec. Hwy. 624→Hwy. 101	=	12.9 miles
	Sec. Hwy. 616→Hwy. 101	=	38.7 miles
	Sec. Hwy. 592→Hwy. 11	=	2.6 miles
	TOTAL.....	=	-54.2 miles
2. ....New Mileage:	Sec. Hwy. 616.....	-	7.1 miles
	Sec. Hwy. 635.....	-	1.6 miles
	Sec. Hwy. 569.....	-	27.0 miles
	TOTAL	+	35.7 miles
	∴ DIFFERENCE.....	=	- 18.5 miles

The resulting difference of 4.1 miles can possibly be accounted for by the revisions of mileages that were carried out during the recent correlation of Maintenance Patrol Sections with the Highway Inventory Control Sections.

Note

These mileage figures include only those sections of highway which are open to traffic.

APPENDIX No. 13A

TYPES OF SURFACES ON THE KING'S HIGHWAYS

As of March 31, 1960

COUNTY OR DISTRICT	CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Algoma-Manitoulin.....	15.3	204.8	177.3	91.1	488.5
Brant.....	18.5	46.9	18.1	.....	83.5
Bruce.....	19.1	109.6	20.7	24.0	173.4
Carleton.....	.....	140.8	.....	3.8	144.6
Cochrane.....	.....	214.6	115.1	106.4	436.1
Dufferin.....	9.2	51.8	1.4	0.5	62.9
Elgin.....	6.6	104.3	2.9	3.4	117.2
Essex.....	46.6	143.2	18.7	.....	208.5
Frontenac.....	.....	110.9	47.4	13.7	172.0
Grey.....	4.9	122.4	.....	9.5	136.8
Haldimand.....	.....	66.9	10.3	.....	77.2
Haliburton.....	.....	37.6	65.1	11.6	114.3
Halton.....	14.9	84.3	5.0	.....	104.2
Hastings.....	.....	108.9	118.3	11.9	239.1
Huron.....	9.2	178.4	13.7	.....	201.3
Kenora.....	.....	204.7	150.5	138.5	493.7
Kent.....	16.2	159.0	.....	.....	175.2
Lambton.....	30.4	108.0	8.8	8.2	155.4
Lanark.....	.....	73.4	16.7	6.2	96.3
Leeds and Grenville.....	25.8	203.6	.....	4.7	234.1
Lennox and Addington.....	.....	54.2	33.0	38.0	125.2
Lincoln.....	1.2	54.9	18.8	.....	74.9
Middlesex.....	9.6	195.9	5.8	17.2	228.5
Muskoka.....	.....	120.2	73.1	4.5	197.8
Nipissing.....	9.7	163.5	138.3	66.8	378.3
Norfolk.....	3.7	50.6	6.2	.....	60.5
Northumberland and Durham.....	.....	207.2	16.2	24.1	247.5
Ontario.....	21.6	109.0	21.0	.....	151.6
Oxford.....	4.1	103.6	0.8	23.0	131.5
Parry Sound.....	.....	114.9	37.8	64.4	217.1
Peel.....	10.2	84.3	12.3	7.3	114.1
Perth.....	0.5	118.2	12.6	0.4	131.7
Peterborough.....	6.5	57.5	29.1	26.3	119.4
Prescott and Russell.....	.....	102.8	.....	.....	102.8
Rainy River.....	.....	81.4	51.1	.....	132.5
Prince Edward.....	.....	26.8	17.7	15.3	59.8
Renfrew.....	5.9	144.9	115.9	17.2	238.9
Simcoe.....	5.4	294.7	7.9	5.6	313.6
Stormont, Dundas and Glengarry.....	.....	163.2	.....	.....	163.2
Sudbury.....	2.0	136.2	23.2	117.7	279.1
Temiskaming.....	.....	127.1	99.9	37.6	264.6
Thunder Bay.....	.....	504.3	22.9	105.1	632.3
Victoria.....	.....	103.5	40.1	13.0	156.6
Waterloo.....	11.3	42.6	2.0	16.9	72.8
Welland.....	25.0	68.5	19.4	.....	112.9
Wellington.....	5.0	122.8	11.0	3.1	141.9
Wentworth.....	3.1	118.9	34.3	.....	156.3
York.....	0.9	155.0	44.6	1.8	202.3
TOTALS.....	342.4	6,100.8	1,685.0	1,038.8	9,167.0

The above mileages relate to fully assumed portions **only**.

APPENDIX No. 13B**SUMMARY OF ROAD MILEAGES BY HIGHWAY DISTRICTS
KING'S HIGHWAYS**

As of March 31, 1960

DISTRICT	CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Chatham.....	93.2	409.7	27.5	6.1	536.5
London.....	51.7	451.7	8.7	22.7	534.8
Stratford.....	21.9	481.2	40.1	51.2	594.4
Hamilton.....	35.8	424.7	112.1	.....	572.6
Owen Sound.....	33.5	411.9	22.9	38.7	507.0
Toronto.....	31.2	358.2	80.0	2.2	471.6
Port Hope.....	16.4	462.4	86.0	78.7	643.5
Kingston.....	25.8	457.5	85.1	53.6	622.0
Ottawa.....	5.9	530.4	16.7	10.0	563.0
Bancroft.....	.....	51.1	302.7	43.7	397.5
Huntsville.....	.....	302.5	170.7	58.9	532.1
North Bay.....	9.7	281.3	94.4	92.9	478.3
New Liskeard.....	.....	191.7	181.4	89.3	462.4
Cochrane.....	.....	195.7	33.6	89.1	318.4
Sudbury.....	6.3	208.7	44.1	63.3	322.4
Sault Ste. Marie.....	11.0	190.8	154.5	94.8	451.1
Fort William.....	.....	445.5	22.9	105.1	573.5
Kenora.....	.....	245.8	201.6	138.5	585.9
TOTALS.....	342.4	6,100.8	1,685.0	1,038.8	9,167.0

The above mileages relate to fully assumed portions **only**.**APPENDIX No. 13C****ROAD MILEAGES—SECONDARY HIGHWAYS**

As of March 31, 1960

COUNTY OR DISTRICT	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Frontenac.....	.....	6.3	28.9	35.2
Hastings.....	.....	11.9	34.0	45.9
Lanark.....	.....	.....	14.0	14.0
Lennox and Addington.....	0.8	5.4	.....	6.2
Peterborough.....	.....	6.7	51.3	58.0
Renfrew.....	.....	22.2	82.5	104.7
Victoria.....	.....	13.0	45.8	58.8
Algoma-Manitoulin.....	6.9	53.1	329.6	389.6
Cochrane.....	0.7	19.9	162.2	182.8
Haliburton.....	.....	54.2	44.3	98.5
Kenora.....	2.3	3.2	105.2	110.7
Muskoka.....	7.9	44.3	33.7	85.9
Nipissing.....	.....	5.6	75.6	81.2
Parry Sound.....	.....	65.6	100.4	166.0
Rainy River.....	5.3	.....	219.0	224.3
Sudbury.....	41.1	25.5	200.6	267.2
Temiskaming.....	2.4	18.8	179.7	200.9
Thunder Bay.....	11.3	7.7	398.3	417.3
TOTALS.....	78.7	363.4	2,105.1	2,547.2

The above mileages relate to fully assumed portions **only**.

APPENDIX No. 13D**SUMMARY OF ROAD MILEAGES BY HIGHWAY DISTRICTS
SECONDARY HIGHWAYS**

As of March 31, 1960

DISTRICT	HIGH COST		GRAVEL	TOTAL
	BITUMINOUS	BITUMINOUS		
Port Hope.....		18.6	67.3	85.9
Kingston.....	0.8	11.7	9.3	21.8
Ottawa.....			44.5	44.5
Bancroft.....		35.2	147.3	182.5
Huntsville.....	7.9	136.4	138.5	282.8
North Bay.....		36.0	145.8	181.8
New Liskeard.....	3.1	35.1	302.7	340.9
Cochrane.....		3.6	143.3	146.9
Sudbury.....	41.1	63.2	250.8	355.1
Sault Ste. Marie.....	12.1	12.7	190.2	215.0
Fort William.....	11.4	7.7	351.2	370.3
Kenora.....	2.3	3.2	314.2	319.7
TOTALS.....	78.7	363.4	2,105.1	2,547.2

The above mileages relate to fully assumed portions **only**.**APPENDIX No. 13E****ROAD MILEAGE IN ONTARIO**

(March 31, 1960)

	TOTAL MILES	TYPE OF PAVEMENT			
		CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL
King's Highways.....	9,167.0	342.4	6,100.8	1,685.0	1,038.8
Secondary Highways.....	2,547.2	.....	78.7	363.4	2,105.1
TOTAL KING'S HIGHWAYS.....	11,714.2	342.4	6,179.5	2,048.4	3,143.9

APPENDIX No. 14 DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1959 (Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1959-60 \$
34R	Dillon Cove Road	10.0	Carling	Perry Sound	21,235.57
82R	Bernard Lake Road	1.4	Strong	Perry Sound	7,449.32
91R	Fifth Line Road	5.8	Nipissing	Perry Sound	49,828.87
93R	Athens-Charleston	5.0	County	Perry Sound and Grenville	17,035.59
106	Church Line Road	20.0	Galway and Caverdigh	Peterborough	6,878.25
121R	Booth Track Road	4.7	Perry East and Himswoorth North	Perry Sound	65,460.60
122R	Old Nipissing Road	7.5	Chapman	Perry Sound	4,497.20
141	Blouaislee	13.0	Thessalon and Leifroy	Aloma	13,131.75
160	Piercher Lake Road	17.0	Sharonville et al	Haliburton	11,390.16
170	Perth Road	17.0	County	Frontenac	64,363.72
172	Hardwood Lake Road	11.0	Racine	Renfrew	45,760.57
192	French Line Road	8.5	Darling	Lanark	9,994.78
202R	Macberley Road	4.0	Sherbrooke South	Lanark	11,385.25
205	Champion Road	17.6	Tiny	Simcoe	1,100.00
208R	Pyette Point-Big Bay Oxenden	2.6	Koppel	Grey	51,530.54
231R	Long Point Park Road	20.1	Long Point Park Commission	Norfolk	385.50
242	Assinacook-Shequandah-Bidwell	5.1	Howland and Assinacook	Sudbury	42,835.00
248	Bancroft Drive-Rednerville	8.0	McKim Neelon and Garson	Sudbury	44,903.17
263	Carrying Place-Rednerville	5.0	County	Prince Edward	556.99
271	Russell-Embrun	13.5	Jaffray and Melick	Kenora	6,555.96
274	Foxborough Road	2.7	County	Prescott and Russell	94,486.10
285	Houghton Bay Road	4.8	County	Hastings	7,067.52
288	Escott Rockport	5.7	Bastard and Burgess South	Leeds and Grenville	14,915.55
286	Martin Bird-Larder Lake-Englehart	8.5	Escott Front	Leeds and Grenville	8,645.79
289	Nepean Swamp Road	5.9	Larder Lake	Temiskaming	50,000.00
291	County Road No. 8 (part)	12.2	Nepean	Carleton	28,341.51
314	Kelly's Corners to Cobden	7.5	County	Frontenac	82,519.09
315	Dean Lake Road	2.5	County	Renfrew	2,855.14
317	Mountain Road	4.2	Thompson	Aloma	5,318.88
318R	Sturgeon Bay Road	5.0	Needing	Thunder Bay	7,101.81
323	John Street Road	7.0	Needing	Thunder Bay	6,602.88
336	Lanark-Elphin	12.0	Oliver	Thunder Bay	14,774.80
349	Highgate to Highway 3	4.5	County	Lanark	72,821.99
357	Athens-Mallorytown	3.0	County	Kent	10,624.26
358	County Road 12B Relocation	4.0	County	Leeds and Grenville	38,953.30
361	Lake Dore Golden Lake	9.0	County	Lanark	801.95
365	County Road No. 11 (part)	5.3	County	Renfrew	3,355.10
366	County Road No. 13 (part)	8.0	County	Leeds and Grenville	72,993.41
369	Fournier-Routhier	7.3	County	Prescott and Russell	47,803.16
379	Long Lake Road	5.0	Waters	Prescott and Russell	13,196.44
381R	Playfair Loop Road	6.0	County	Sudbury	11,000.00
382	Calton-Griffiths Corners	4.1	Bayham	Cochrane	14,529.24
384	Mt. Forest-Shebourne	25.8	Counties	Elgin	207,207.86
395	Troyton-Devlinville	7.0	Camden East	Grey	397,346.00
397	Troyton-Devlinville	7.0	Camden East	Lennox and Addington	15,141.00
405	Comaught-Rangus-Torholton	4.3	March	Carleton	43,669.80
					27,359.94

406	North Gower River Road	6.5	North Gower	Carleton	31,247.36
407	John Street	7.5	Municipality of Shumiah	Thunder Bay	3,180.13
409	Russell, Huntsville	9.5	Cardwell	Muskoka	49,406.79
410	Lanark Dalhousie	2.0	Dalhousie and Sherbrooke North	Lanark	6,184.66
411	Winchester Melvin	7.5	Winchester	Stormont, Dundas and Glengarry	5,083.83
414	Concession IX/X Road	4.5	Hungerford	Hastings	1,000.00
415	Snow Road Onupah	9.5	Palmerston	Frontenac	29,053.57
416	Halloway By-pass	6	County	Hastings	4,028.49
420	Denbigh-Bayliss	7.5	Denbigh, Abinger and Ashby	Lennox and Addington	13,628.94
421	Combermere-Hopfield	6.3	Radcliffe	Renfrew	117.30 Cr.
422	Hallowell Hillier Townline	11.1	County	Prince Edward	360.16
423	Grand River Road	7.0	County	Haldimand	82,496.16
429	Warren-St. Charles	10.5	Richmond	Lennox and Addington	9,504.55
431	Concession III and IV Road to Flint	6.8	Ratter and Dunnet	Sudbury	5,984.55
433	Highway 45 to Graecens Corners	3.0	O'Connor	Thunder Bay	6,882.04
435	Chisholm-East Ferris Boundary	9.5	Alnwick	Northumberland and Durham	8,999.98
438	Angus Greenore Road	13.0	Chisholm	Nipissing	16,779.26
445	Concession III/IV Pittsburgh Road	5.8	County	Simcoe	124,145.95
446	Glen Huron Dunelin	4.5	Pittsburgh, Leeds and Lansdowne Front	Frontenac, Leeds and Grenville	33,297.50
449	Kemptville-County Road No. 24	4.2	Nottawasage	Simcoe	29,222.96
450	Lilly's Corners Lyndhurst	4.8	County	Leeds and Grenville	95,494.37
452	Vankleek Hill Westerly	7.3	County	Leeds and Grenville	44,000.00
453	Sydenham Otter Lake	2.5	Minto	Prescott and Russell	26,069.08
454	Sideroad 20-21	2.5	Loughborough	Frontenac	15,000.00
456	Fourth Line Road	1.0	Tarentorus	Wellington	31,817.89
457	Kushog Lake Road	6.5	Stanhope	Alcona	576.65
458	Fitzroy Harbour Road	2.2	Fitzroy	Haliburton	23,080.19
459	Cooper's Falls Road	4.6	Rama	Carleton	1,362.60
460	Ridge Road in Rawdon	5.0	County	Ontario	8,786.60
461	Courtland Port Rowan	19.0	County	Hastings	45,898.78
462	Concession XII, XIII Road	3.2	South Himsworth	Norfolk	505,066.68
463	Brif's Creek Baptiste	5.5	Monteagle and Herschell	Parry Sound	25,611.04
467	Brakenring Road	6.0	Watt	Hastings	45,573.69
468	Sideroad 6-7	3.8	Evanturel	Muskoka	25,703.85
470	Elora Road	14.1	County	Temiskaming	5,746.25
471	Alvinston Courtright	11.5	County	Bruce	188,896.11
472	Hanover-Neustadt Chifford	11.5	County	Lambton	624,570.50
473	Balsom Road	2.5	Hagerman	Grey	150,261.01
477	County Road No. 85	9.5	County	Parry Sound	10,532.18
478	Bay Road	5.1	South Elmsley	Wellington	27,440.47
479	Crow Lake Road	4.0	County	Leeds and Grenville	13,436.66
481	Fourth Line Road	5.5	Kearb	Frontenac	24,671.66
482	Pictou Black River	7.7	County	Prince Edward	9,305.96
484	West Green St. Isidore	2.5	County	Prescott and Russell	67,676.40
485	Third Line East	8.0	Caledon	Peel	78,990.15
486	McLachlan Road	9.0	County	Dufferin	6,898.98
487	Black David Matawatschan	5.0	McDougall	Parry Sound	95,437.06
488	Fitzroy-Torbolton	3.8	Brougham	Renfrew	36,791.64
489	Fisherton Simlampton	15.8	County	Carleton	170,448.26
491	Old Indian Line	1.5	County	Grey	27,557.73
492	Brook's Road	1.7	West Ferris	Haldimand	204,358.86
493	Prody Centreview-Bell Rapids	3.7	Bangor, Wicklow, McClure	Nipissing	71,278.60
494	Morganston-Cuff's Corners	11.0	County	Hastings	44,962.80
495	Kendall-Garden Hill	7.2	County	Northumberland and Durham	19,460.01
497	Bonnechere River Road	3.0	County	Northumberland and Durham	330,341.43
498	Spanish River Bridge	3	Salter, May, Harrow, Town of Massey	Renfrew	196,128.56
				Sudbury	10,283.23
					29,315.57

(Authorized by Part VIII of The Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1959-60
499	Dunlop Blyth Road	14.5	County	Huron	287,774.81
500	Horseshoe Lake Road	6.5	Anson, Hinton, Minden	Haliburton	29,359.98
501	Highway 6	3.8	Montgoy	Cochrane	3,945.95
502	Highway 7 to Clandeboye	4.0	County	Middlesex	117,824.25
503	Kerrywood Road	3.7	County	Lincoln	48,990.60
504	Kerrywood Road	6.0	Smith	Peterborough	69,978.64
505	Kerrywood Lake Road	3.8	Osgoode	Carleton	34,786.86
506	North Road off Carr Township	5.3	Municipality of Black River	Cochrane	2,983.95
507	Chamberlain-Peaud	1.6	Chamberlain	Temiskaming	3,956.41
508	Flinton Road	3.0	County	Lennox and Addington	13,378.00
509	La Salle Blvd.	1.9	McKim	Sudbury	149,179.71
510	Kiosk Road	7.0	Calvin	Nipissing	48,424.60
511	Adolphus Reach Road	1.2	Adolphustown	Lennox and Addington	2,626.45
512	3 bridges and approaches to Snowden Road	1.5	Wolford	Leeds and Grenville	45,058.75
513	Pidgeon Lake Road	14.5	County	Victoria	41,032.39
514	Bannockburn, Cooper	4.5	Madoc	Hastings	17,136.15
515	Fourth Line Road	5.7	Albion	Peel	68,421.15
516	Boyd's Road	3.0	Municipality of Calvert	Cochrane	14,307.13
517	15th Sideroad	9.5	Flos	Simcoe	35,586.85
518	Sunnyside Road	1.1	Tay	Simcoe	20,604.02
519	Bar River Road	2.0	Laird	Algoma	32,055.01
520	McGrath Road, Clontarf	8.0	Gratton and Sebastopol	Renfrew	17,986.72
521	County Road No. 26	11.5	County	Carleton	47,233.22
522	Elmira By-pass	3.0	Woolwich and Wellesley	Waterloo	32,948.19
523	Sulphide-Tweed	5.3	County	Hastings	49,846.04
524	Hallville Reids Mill	3.5	Mountain	Hastings	34,411.18
525	Heart Lake Road	4.5	Chinguacousy	Stormont, Dundas and Glengarry	73,999.02
526	Sauble Beach By-pass	9.4	County	Peel	78,422.92
527	Rose Point Road	1.8	Foley	Bruce	48,130.27
528	Manchester-Goodwood	12.7	County	Parry Sound	23,210.77
529	Hay Bay Road	6.0	South Fredericksburgh	Ontario	3,752.42
530	O'Brien Street and Steep Rock Road	2.4	Atikokan	Lennox and Addington	23,889.49
531	Loon Lake Road	1.0	Municipality of Shuniah	Kanby River	8,051.56
532	Concession VI-VII Road	5.5	Westmeath	Thunder Bay	13,001.01
533	Hastings-Keen	12.5	County	Renfrew	54,890.93
534	Pucker Street	1.0	Horton	Peterborough	3,201.22
535	Admaston-Bagot Townline	10.4	Admaston and Bagot	Renfrew	28,000.32
536	Station Road	2.0	Municipality of Larder Lake	Renfrew	19,997.43
537	Concession VI and VII	1.5	Williamsburgh	Temiskaming	15,326.82
538	Concession XI and XII	2.2	Huntingdon	Dundas	15,721.38
539	Scotiaria Road	0.3	County	Prince Edward	15,000.00
540	McLure Lake Road	2.3	Ryerson	Parry Sound	11,221.58
541	Millbank Road	12.0	County	Parry Sound	1,485.14
542	Pieria-Omanan	6.7	Carleton and Millar	Frontenac	14,918.87
543	Pieria-B Road	3.5	Norfolk	Thunder Bay	6,899.60
544	Sideroad 15/16	3.0	Wollaston	Hastings	15,461.31
545	Harlowe-Arden	3.0	Kennebec	Frontenac	14,918.41
546	Loretto Road	12.0	County	Simcoe	40,213.57
547	Sand Point Road	4.2	McNab	Renfrew	28,369.35
548	O'Brien St. to Airport	9	Widdifield	Nipissing	16,390.38

(Authorized by Part VIII of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH Miles	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1959-60
556	Plympton-Besauquet	3.2	Plympton	Lambton	6,091.90
557	Pedham-Waagaville	4.4	Hinchinbrooke	Frontenac	12,070.12
558	Carp North Road	3.7	Huntley	Stormont, Dundas and Glengarry	19,345.05
559	Concession IV and V Road	4.5	Lochiel	Thunder Bay	14,977.73
560	Hilldale Road	4.5	Municipality of Shumiah	Thunder Bay	53,331.95
561	River Road	3.5	Paipoonge	Thunder Bay	27,506.43
562	Shenson-Dobie	9.0	Municipality of Chapple	Rainy River	18,251.99
563	Oliver Lake Road	4.0	Gillies	Thunder Bay	22,572.73
564	Concession VIII Road	3.3	Cornwall	Stormont, Dundas and Glengarry	3,176.10
565	Highway 69 Gilmour	1.8	Tudor and Cashell	Stormont, Dundas and Glengarry	10,139.08
566	Webb's Hill Road	1.4	Rawdon	Hastings	2,883.26
567	Greenlough Road	.6	Limerick	Hastings	4,215.74
568	Madoc-Marmora-Boundary	6.0	Marmora and Lake	Hastings	15,218.11
569	Concession VII VIII Road	2.9	Matilda	Hastings	14,350.51
570	Hamlet-Earlton West	3.0	Armstrong	Stormont, Dundas and Glengarry	23,860.53
571	Warburton-Long Point	6.0	County	Temiskaming	13,248.11
572	County Road No. 21	9.7	County	Leeds and Grenville	13,248.46
573	Twin Lakes Road	7.0	Nakina Improvement District	Stormont, Dundas and Glengarry	43,341.66
574	Glen Small West Road	5.2	Edwardsburg	Thunder Bay	9,498.78
575	Sideroad 22/23	1.9	Tyendinaga	Leeds and Grenville	3,069.10
576	Smith Falls North Gower	10.0	County	Leeds and Grenville	16,800.05
577	Port Commington Road	4.0	Franklin	Hastings	48,369.18
578	Bellamy Road	2.5	Pakenham	Leeds and Grenville	15,604.99
579	Goederham	4.0	Dysart et al Glamorgan	Leeds and Grenville	9,990.56
580	County Road No. 65 (part)	10.5	Essa and Innisfil	Leeds and Grenville	14,713.34
581	Sideroad 2/3 and Concession II and III	4.2	County	Haliburton	1,000.00
582	North hali, Lot 1, Concession III	2.0	County	Haliburton	2,625.00
583	Preliminary Surveys	3.0	McMurrick	Wellington	10,393.67
584				Parry Sound	6,839.84
					2,155.53
					\$7,880,824.96

APPENDIX No. 15 ROAD MILEAGES IN ONTARIO, DECEMBER 1959

	TOTAL MILES	TYPE OF PAVEMENT				EARTH
		CONCRETE	BITUMINOUS	MULCH	GRAVEL AND CRUSHED STONE	
King's Highways.....	9,002.80	440.70	5,745.80	1,519.20	1,297.10	.....
Secondary Highways.....	2,561.60	.....	163.10	52.30	2,346.20	.....
Total King's Highways.....	11,564.40	440.70	5,908.90	1,571.50	3,643.30	.....
County Roads.....	9,431.09	135.19	1,607.05	2,590.24	5,094.24	4.37
Organized Townships.....	51,233.92	61.89	1,030.30	942.61	41,200.14	7,998.98
Unorganized Townships.....	4,717.02	.....	.....	3.00	3,521.61	1,192.41
Total Municipal Roads.....	65,382.03	197.08	2,637.35	3,535.85	49,815.99	9,195.76
Total All Rural Highways and Roads.....	76,946.43	637.78	8,546.25	5,107.35	53,459.29	9,195.76
Metropolitan Roads.....	297.01	6.27	265.89	5.30	15.01	4.54
City, Town and Village Streets.....	8,283.31	504.61	2,606.97	1,158.38	3,618.84	394.51
Total Urban Streets.....	8,580.32	510.88	2,872.86	1,163.68	3,633.85	399.05
Total Rural Roads and Urban Streets — 1959.....	85,526.75	1,148.66	11,419.11	6,271.03	57,093.14	9,594.81
" — 1958.....	85,092.80	1,136.89	10,010.68	6,641.04	56,456.06	9,848.13
" — 1957.....	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02
" — 1956.....	83,508.24	1,337.88	9,188.73	5,750.73	56,597.11	10,433.76
" — 1955.....	82,270.59	1,428.88	8,126.72	5,858.38	55,991.30	10,865.31

CHRONOLOGY—DEPARTMENT OF HIGHWAYS

1959

- March 16 — Hon. Fred M. Cass, Minister of Highways presented in the Legislature a report "Ontario Roads and Streets". This report represents a study to improve and maintain the entire highway, road and street system based on the increase in traffic volume over the next 20 years.
- March 22 — Department estimates for 1960-61 presented to the Legislature by Hon. Fred M. Cass, Q.C.
- August 6 — Highway 401 officially opened between the junction with Highway 2, just east of Gananoque and the Joyceville Sideroad.
- September 9 — Bruce County Road No. 21 designated as development road.
- September 25 — Hon. Fred M. Cass, Minister of Highways, elected president of Canadian Good Roads Association.
- November 13 — Highway 401 officially opened from Long Beach, five and a half miles west of Brockville to Prescott by Hon. Fred M. Cass.
- November 19 — Bridge across Thames River on Highway 2, west of Delaware, officially opened.
- November 26 — Highway 401 between Highway 10 and Highway 25 officially opened, bringing total mileage of Highway 401 now in use to 273 miles.
- November 27 — The Huntsville By-pass section of Highway 11 officially opened by Hon. George C. Wardrope, Minister of Reform Institutions.
- December 22 — Ontario will undertake a \$15,000,000 program for the construction of northern resource development roads under an agreement with the Federal Government.
- December 23 — Department of Highways announces that new 22-mile, two-lane extension of Highway 400 from south of Crown Hill to Coldwater will be open to traffic before Christmas holiday.



ONTARIO

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Annual Report

OF THE

Department of Highways

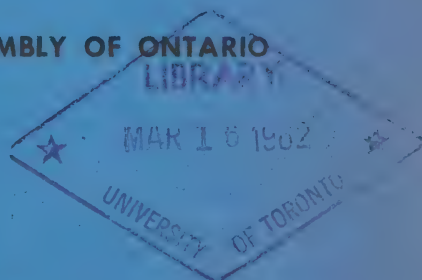
ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1961

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO



Printed and Published by Frank Fogg
Printer to the Queen's Most Excellent Majesty
TORONTO

1961



ONTARIO

Annual Report

OF THE

Department of Highways

ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

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THE LEGISLATIVE ASSEMBLY OF ONTARIO

SESSIONAL PAPER NO. 20

Printed and Published by Frank Fogg
Printer to the Queen's Most Excellent Majesty

TORONTO

1961

TO THE HONOURABLE JOHN KEILLER MACKAY,
D.S.O., V.D., LL.D.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1961.

Respectfully submitted,

FREDERICK M. CASS,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 18, 1961.

TO THE HONOURABLE FREDERICK M. CASS, Q.C.,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1961.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

W. J. FULTON,
Deputy Minister.

Department of Highways, Ontario,
December 15, 1961.

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SUMMARY REPORT OF DEPARTMENT OPERATIONS

by W. J. FULTON, P.Eng., Deputy Minister of Highways

Keeping abreast of our Province's rapidly expanding economy, Ontario's highway construction programme has continued at an accelerated pace. Since the Department's studies into future highway needs for both the provincial highway system and the rural and urban roads network, published in the late 1950's, revealed the necessity of a more integrated road system for Ontario, the Department of Highways has worked steadily toward a closer understanding between the various levels of government of the many and complex highway problems.

In the past fiscal year urban traffic studies were undertaken in 20 Ontario cities. Highway needs studies of built-up suburban areas beyond city boundaries were completed for Metropolitan Toronto and the Guelph, Kitchener-Waterloo, Preston and Galt region. As a result of extensive highway studies in the Hamilton-Wentworth area, a study entitled, "A Highway Plan for the Hamilton-Wentworth Area" was published in October and was widely distributed.

Through our Municipal Roads Branch a total of \$78,759,000 was paid in aid of roadbuilding programmes carried out by municipalities throughout the Province. Valuable technical assistance, such as soils investigations and examination or inspection of asphalt paving projects, was made available to the municipalities through the Municipal Roads Branch. Facilities of the Materials and Research Section of the Operations Branch were made available for this purpose.



The Deputy Minister Receiving the Coveted C.G.R.A. Award.

With the mileage of King's Highways and Secondary Highways increasing every year, maintenance remains one of the most important and demanding functions of the Department. High standards of maintenance add to the efficiency and safety of our highways and afford the motoring public more pleasure and convenience when travelling.

Besides the various functions of the maintenance branch such as: zone striping, signing, highway lighting, inspection and repairs to bridges and maintenance of road surfaces, a great deal of attention was given to the maintenance of the right-of-way to preserve the natural beauty of the country through which our highways run.

Landscaping along Ontario highways during the past fiscal year involved the planting of 46,530 shrubs, deciduous trees, and evergreen species; grass seeding of close to 29 million square yards of right-of-way and the relocating and planting of 1,720 large trees with the Department's "Tree Saver" machine. Roadside tables and picnic areas provide an appreciated resting spot for motorists, and during the winter months 73 new picnic sites were developed under the winter employment programme.

In October a new machine built by our Equipment Section for burning surplus asphalt from fat, slippery pavement was put into operation. This machine, which we call a "Pavement De-Slicker" restores traction qualities to sections of road which have become slick. In the short time this machine was in operation during 1960 more than 10 miles of highway were treated.

In September the 1,453 miles of Trans-Canada Highway through Ontario were officially opened by the Honourable Leslie M. Frost, Q.C., Prime Minister of Ontario. Official Opening Ceremonies were held at Wawa on King's Highway 17, Trans-Canada.

The Queen Elizabeth Way became a completely controlled-access highway between Toronto and Hamilton. Widening of the Credit River bridge and the Oakville Creek bridge was carried out in preparation for widening the Queen Elizabeth Way from four to six lanes.

Construction is progressing favourably on Ontario's second skyway, located on the Queen Elizabeth Way over the Welland Canal, near Homer.

The first contract for construction of Controlled-Access Highway 403, known locally as the Chedoke Expressway, was awarded late in 1960.

During the past fiscal year 63 miles of Highway 401 were completed and opened to traffic. With this addition, the total mileage of Highway 401 now in use is 303 miles. Trans-Provincial Highway 401 is expected to be open to traffic in 1963, well ahead of schedule.

The first stage of the Ottawa Queensway was opened to traffic in November. This five-and-a-half-mile section of four-lane, controlled-access highway includes four-and-a-half miles of King's Highway 17, Trans-Canada, built to the same high standard. Construction is well under way on the second stage of the Queensway project at the western end of the city.

In December a public meeting was held at Buttonville to discuss with local residents the purchase of property for the proposed four-lane, controlled-access Highway 404.

Construction will begin in 1961 on Highway 405. This controlled-access highway will extend from the Queen Elizabeth Way to the new international bridge, now under construction at Queenston.

As of March 31, 1961, our highway system included 9,275 miles of King's Highways and 2,619 miles of Secondary Highways — a total of 11,894 miles.

Total net expenditure by the Department was \$237,994,017 in the fiscal year ended March 31, 1961, as compared with \$248,514,195 in the previous year. Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	FISCAL YEARS ENDING	
	MARCH 31, 1961	MARCH 31, 1960
Gross capital payments on construction of King's Highways and Secondary Highways.....	\$133,324,014	\$149,465,398
Less: Recoveries on (1) Trans-Canada Highway, (2) Ottawa Queensway, (3) Railway Bridges.....	19,813,586	20,107,090
Net capital payments on construction of King's Highways and Secondary Highways.....	113,510,428	129,358,308
Ordinary expenditure on King's Highways and Secondary Highways including maintenance and general operating expense.....	44,679,159	47,848,608
Provincial subsidies on municipal roads and streets and cost of development roads and roads in unincorporated townships.....	79,804,430	71,307,279
TOTAL NET EXPENDITURES.....	\$237,994,017	\$248,514,195

Contracts Completed

During 1960-61 capital contracts were completed on 700 miles of grading; 625 miles of hot mix paving; 104 miles of resurfacing; 25 steel structures; 82 general structures. Completed capital contracts totalled 267, ordinary contracts 107 and miscellaneous 123.

Some 214 capital contracts and 134 ordinary (maintenance) contracts were called in 1960-61. New capital work included 442 of grading and granular base, 632 miles of hot mix paving and 67 structures of various types. Maintenance contracts covered nine hot mix patching contracts, 151 miles of surface treatment and 22 for winter sanding.

Index

The index of tender prices paid on road contracts fell during the year, indicating somewhat lower unit prices. The index was 124.2 for 1960-61 as compared with 129.1 in 1959-60 and the ten-year high of 156.8 in 1956-57.

The index of prices for road materials purchased by the Department increased from 116.8 in 1959-60 to 117.2 in 1960-61.

Information Section

G. A. Wells, Information Officer

The Information Section is the source of both general and specific information regarding the over-all work of the Department.

Factual material on and special strip maps of new sections of highway or major construction projects in various stages — as well as photos taken expressly for the purpose — were distributed throughout the year to newspapers, radio and television stations in Ontario and in neighbouring American states, trade magazines and other media. Press releases in connection with official openings of major projects, policy announcements, or other *newsworthy* occurrences were issued at a rate well above one every-other-week. This does not include releases sent out on a highly selective basis to the newspapers in areas directly concerned, such as appointments, retirements, transfers, etc., of senior personnel.

Information on a wide range of subjects related to plans for future construction, work in progress, or to the activities of the Department in general was provided to all communications media. Articles were prepared on request for newspapers and magazines, and photos to appear with the articles — as well as to fulfill many specific requests for photos — were provided in volume.

To assist magazine and newspaper writers tell of the work of the Department in feature articles, the Information Section carried out extensive research, arranged interviews with Branch or Section Heads and otherwise provided valuable assistance. A less demanding type of aid was afforded to school pupils who had selected some aspect of the work of the Department for essays or as part of a project assignment.

Many requests for information from within the Department itself were dealt with by the section. Other Departments of government, dominion and provincial, were afforded considerable assistance in preparing reports and other material.

In October, 1960, at the 41st convention of the Canadian Good Roads Association, the Department of Highways, Ontario, received the C.G.R.A. Annual Award for being, to quote the words used in the presentation, “the organization, public or private, making the outstanding contribution to better public understanding of the role of roads and streets in the nation’s economic and social welfare”. It was the first time any government organization had won the award for an *integrated* Public Relations Programme.

The Information Officer, or an assistant delegated by him, participated in the Department’s internal training programme by addressing classes at the Training School regularly on the work of the Information Section. Ways in which every employee could further good public relations for the Department and the importance of correct work attitudes and courteous consideration of the public were stressed in these talks.

The D.H.O. *News*, a magazine published for the information of employees of the Department by the Information Section, reported many of the major highway construction projects completed, and continued to tell the story of the part played by the Department in eleven issues during the fiscal year.

Many feature stories inspired by articles in the D.H.O. *News* appeared throughout the year in daily and weekly newspapers and many of the trade magazines.

The format of the Official Ontario Road Bulletin — for which the Information Section is responsible — was modernized and improvement made in the terms used to describe road conditions. The mailing list was also revised.

The Road Bulletin was issued on a semi-monthly basis from May 25 to November 1, 1960, with an average distribution of 15,200 copies and a peak distribution of 24,142 copies for the August 31, issue. It was also distributed at the Department of Highways' display at the Canadian National Exhibition, the Central Canada Exhibition, Ottawa, and many Fall Fairs around the Province. The Bulletin was in demand from individual motorists, automobile associations and tourist information centres throughout Ontario and the United States. Individual requests resulted in the mailing of more than 8,500 copies of the Road Bulletin, and approximately 25,000 Road Maps.

Another publication which is the responsibility of the Information Section is the Annual Report of the Department of Highways, Ontario. This bound volume, running approximately 290 pages each year, reports upon the work of the Department of the fiscal year, interspersed with a great many photos, charts and maps. For the 1959-1960 report 1,029 copies were produced for distribution to daily and weekly newspapers, the trade press and other interested organizations and individuals outside the government.

At the Canadian National Exhibition the Information Section assisted in staffing and supervising the D.H.O. exhibit.

Electronic Section

A. E. Goodwin, P.Eng., Superintendent

The Electronic Section began the 1960-61 fiscal year by strengthening its computing power. This was achieved through the acquisition of a new computer "memory" and new input/output devices.

The new "memory" has 4,000 words of storage space, which is twice that of the old memory.

The new input device is an IBM 543 unit with a reading speed of 250 cards per minute. The new output device is an IBM 544 unit with a punch speed of 250 cards per minute.

The impact of this additional strength made itself felt in all areas which had large programmes (requiring large computer memory capacity) that could not be readily accommodated on the original memory due to its inadequate size. These areas had either to forgo the use of a computer or operate with a restricted programme.

Modifications to the road design programme, land survey programme, cost accounting programme, traffic distribution programme and many bridge programmes became feasible with the advent of the new equipment. Planning and programming work went ahead in all of these areas in order to make maximum use of the new facilities.

A major undertaking, planning for which began in the fall of 1960, was that of writing a group of programmes collectively named "The Gravity Model Program". The individual programmes of the package group are:

- (i) Minimum Path Selection and Traffic Assignment Programme.
- (ii) Gravity Model Traffic Distribution Programme.

- (iii) Traffic Distribution Balancing Programme.
- (iv) Multiple Regression Programme.

The utilization of these four programmes, combined with the traffic engineer's judgement, will enable us to test a proposed new road network on the computer without the need of first constructing it. This is an advanced idea which will provide the engineer and the administrator with a true method of planning.

An IBM 1404 electronic computer was placed on order in the summer of 1960.

This computer is revolutionary in many respects. It has no control panel as does the IBM 650 (our current computer) and all input/output control is done through internal programme instructions. This computer is in three major units — the input, which can be cards or magnetic tape, the processing unit, which has core memory as opposed to a rotating drum or memory on the IBM 650 computer, and the output unit which is a high speed 600 line per minute printing unit that has facilities for form heading printing without the board wire control of our conventional IBM 407 accounting units.

This new equipment is due for delivery in late 1962 and will give increased calculating and report writing speeds at reduced cost.

A Methods and Procedures Group will be formed from the existing senior staff and they will be responsible for the systems design and programme writing necessary in order to obtain maximum use of this new equipment.

Plans were well advanced by the end of the year to swing over to the magnetic tapes, promised for April 1961. There has been considerable activity in rewriting old programmes and developing new ones to take advantage of this new, high-speed memory extension.

Plans include the use of tapes for the complex traffic programme previously mentioned and they will become practical when the tapes are delivered. A major boost in our computing ability will be achieved through the tape system.

The amalgamation of the Accounting Data Processing equipment with the Engineering Computing Group has proven to be a satisfactory arrangement.

New applications and the streamlining of existing production methods has led to an improvement in overall efficiency of equipment utilization in all areas. Routine production work has continued to increase, especially in bridge problem calculations. This growth has been accomplished through the close co-operation of liaison personnel and members of the various branches with the staff of the Electronic Section.

The dynamic picture presented at the end of the year indicates an ever increasing realization of the potential of this relatively new section.

Engineering Audit Section

L. R. Eadie, Superintendent, Engineering Audit

Under the general direction of the Engineering Audit Superintendent, the Field Audit Sub-Section is required to review, periodically, the Engineering records for all construction and maintenance contracts throughout the Province. This entails a spot check of the original and final survey measurements, a review of progress payment records to ensure strict adherence to contract provisions,

and frequent inspection visits to the construction site to see that weighing regulations are being properly observed.

In addition, Contract Tenders, Work Orders, Force Accounts, etc., are perused by Head Office and Regional Staff and any obvious errors or other pertinent information is brought to the attention of the appropriate Head Office officials.

Within a specified time from the completion of a construction or maintenance project, the District Engineer submits to the Engineering Audit Section, at Head Office, a summary of all quantities that are payable to the contractor under the terms of the contract or approved Work Orders. It is the responsibility of the Contract Checking Sub-Section to review these records and prepare a report to the District and Head Office Engineers summarizing the audited quantities on which the Final Payment will be based.

For the fiscal year 1960-1961, the following table lists, by Districts, the number of contracts checked with their total monetary value.

	CONSTRUCTION		MAINTENANCE	
	NUMBER	VALUE	NUMBER	VALUE
Chatham.....	8	\$2,522,888	4	\$ 89,543
London.....	7	793,563	7	237,602
Stratford.....	14	2,878,579	7	97,363
Hamilton.....	28	6,931,682	12	651,005
Owen Sound.....	9	772,145	8	175,374
Toronto.....	16	4,211,137	16	1,063,482
Port Hope.....	23	7,295,566	9	300,889
Kingston.....	13	5,272,823	10	356,903
Ottawa.....	21	5,910,845	9	247,591
Bancroft.....	4	984,055	5	81,589
Huntsville.....	14	4,244,850	6	140,397
North Bay.....	3	540,413	16	355,951
New Liskeard.....	18	2,614,054	4	33,421
Cochrane.....	3	605,842	3	81,486
Sudbury.....	10	2,069,009	9	162,752
Sault Ste. Marie.....	9	2,671,454	5	87,798
Fort William.....	16	3,393,981	1	12,707
Kenora.....	7	1,816,694	2	30,349
White River.....	19	9,799,224	.....	.....
	242	\$65,328,804	133	\$4,206,202

During the past year, some improvement has been made in the preparation of As Constructed Plans and Profiles. The original Contract Drawings, as prepared by the Road Design Section, are now used as a basis for developing these records to an As Constructed status. This procedure has greatly expedited the overall plan preparation.

LEGAL BRANCH

Director, A. R. DICK

Solicitors

Regional solicitors have been established in the regional offices of the Department at Kingston, London, North Bay, and Toronto. These solicitors are in a position to advise the personnel of the regional and district offices respecting the legal aspects of the work which is carried on through these offices. Three solicitors are located in the main office of the Department at Toronto to provide legal advice to the various branches of the Department. These solicitors also provide assistance and advice to the regional solicitors where necessary.

Signs and Building Permits Section

This Section administers the policy and regulations regarding the erection of buildings, gasoline pumps, signs and other structures along the provincial highways and also with respect to entrances to controlled-access highways. It maintains general supervision over permits issued by the districts and gives assistance upon request to the Operations Branch personnel.

PERMITS ISSUED AND REVENUE

TYPE	HIGHWAY CLASS	No. OF PERMITS	REVENUE
Building	Controlled-access — approximate value of construction approved — \$19,134,042.32.....	415	N/A
	Other than controlled-access — approximate value of construction approved — \$45,528,833.62.....	4,280	N/A
Gasoline Pumps	All highways.....	3,560	\$37,899.00
Sign	Other than controlled-access.....	3,766	\$23,060.50
Entrance	All highways.....	58	N/A
Encroachment	All highways.....	1,372	

Insurance and Claims Section

This Section is responsible for the insurance policies carried by the Department and for some motor vehicle liability policies carried by other Departments of the Government. The Section investigates and supervises the settlement of claims made against the Department under The Highway Improvement Act and claims made by the Department under The Workmen's Compensation Act. There are other miscellaneous types of tortious claims which are also dealt with by this Section.

VOLUME OF CLAIMS AND INVESTIGATION

Claims against Department	
— non-repair of highway.....	486
Claims against Department	
— miscellaneous liability.....	291
Claims by Department	
— for damage to Department property.....	2,793
Claims by Department	
— for personal injuries to employees.....	51
Investigations of accidents	
— involving government vehicles.....	727

REPORT OF THE FINANCIAL COMPTROLLER**COMPTROLLER, J. G. McMILLEN, C.A.**

The following statements outline the expenditures and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1961:

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Trans-Canada Highway
- IV. The "Queensway" — Ottawa
- V. Receipts
- VI. Comparison of Average Unit Prices paid on Contracts
- VII. Burlington Bay Skyway

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$237,994,017. The following is a comparison of total expenditures with previous years:

1956.....	\$158,859,908	1959.....	\$227,547,235
1957.....	200,850,551	1960.....	248,514,195
1958.....	212,764,943	1961.....	237,994,017

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement

III in the amount of.....	\$176,088,888
with funds recovered or recoverable of.....	94,612,759
and a net cost to the Department of.....	\$ 81,476,129

Recoverable Expenditures

Funds recovered as a result of Departmental expenditures have reached an all time high of \$26,568,374 made up as follows:

Trans-Canada Highway.....	\$16,500,840
Ottawa Queensway.....	1,367,729
Railway Bridges.....	1,945,017
Total of items separately set out in Statement II.....	\$19,813,586
Federal Provincial Resources Roads.....	1,500,000
Department of Mines	1,620,452
Sundry Items credited to Expenditure and Revenue.....	3,634,336
	<u>\$26,568,374</u>

It is interesting to note the relationship of such recoverable expenditures to the Department's total expenditures on the Construction and Maintenance of King's Highways. The relationship is the recovery of \$1.00 for every \$7.00 expended for such purposes.

Pre-qualification of Contractors

Of the 227 capital contracts awarded during the year, 143 or 63% required the pre-qualification of contractors. An average of 8.8 bids were received on each qualified contract as compared with 7.6 bids received on unqualified contracts.

The experience provisions of the qualification procedures were amended during the year to give more effect in contractors' ratings to previous road construction experience in Ontario.

Indices of Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted:

Index of Tender Prices paid on Road Contracts Indices of Tender and Material Prices

It is evident from these indices that unit prices on contracts awarded have dropped during the year, while prices paid for road materials have remained the same.

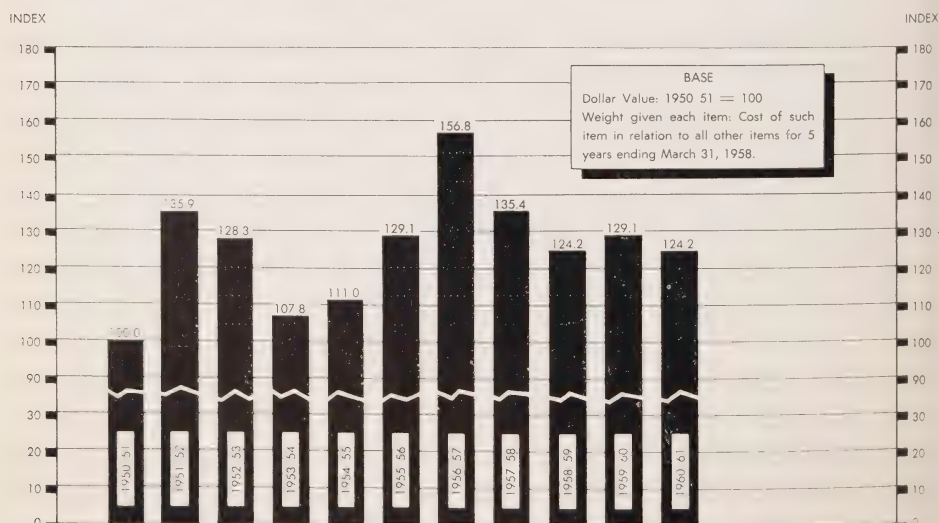
In the period covered by the indices, the upward trend is shown for both contract and material prices.

Burlington Bay Skyway

The accompanying schedules indicate a marked increase in the number of vehicles using the skyway.

The new skyway administration building was completed and occupied in November, 1960.

Automatic toll collection equipment was installed on four lanes (2 each way) by March 31, 1961 and went into operation on April 4, 1961.



STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1961 and March 31, 1960

	YEAR ENDING MARCH 31, 1961	YEAR ENDING MARCH 31, 1960
Maintenance of King's Highways and Secondary Highways —		
Winter Maintenance —		
Contract and day labour.....	\$12,751,929	\$15,487,969
Equipment operating costs due to standby (60%)	404,230	37,207
Summer Maintenance —		
Patrol costs	9,562,118	9,968,156
Gravel crushing — contract and day labour.....	1,171,833	1,331,374
Prime — contract and day labour..	518,223	999,290
Hot mix patching — contract.....	564,500	1,019,732
Surface treatment — contract and day labour	422,607	611,120
Mulch — day labour	29,034	132,618
Major bridge repairs.....	207,056	201,114
Salt shed construction.....	204,573	100,371
Equipment operating costs due to standby (40%)	269,486	24,804
Unallocated portion of electrical, zone painting and forestry operations		96,195
Operation of ferries.....	282,992	241,721
Floods and other emergencies.....	168,927	22,424
District office overheads — including engineering, warehouse and municipal.....	6,197,922	5,779,367
Net cost of equipment rented to municipalities.....	64,916	69,527
Expenditures recovered, but credited to revenue	147,438	156,991
Increase (decrease) in inventories....	77,681	(80,054)
	\$33,045,465	\$36,199,926
Repaving of present roads.....	1,081,218	1,593,791
Maintenance of development roads.....	139,957	206,084
Maintenance of roads in unincorporated townships in Northern Ontario.....	733,405	643,039
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)....	\$35,000,045	\$38,642,840
General Operating Expenditures —		
Purchase of new trucks, tractors, graders, sanders, plows and other road equipment.....	\$ 3,063,346	\$ 2,682,180
Printing and stationery.....	822,809	953,325
Office furniture and equipment....	336,904	384,055
Workmen's compensation.....	218,465	194,778
Insurance and claims.....	193,151	196,110
Unemployment insurance stamps	270,975	249,016
Maintenance of buildings, and area office rentals.....	322,460	370,601
Bus rentals.....	117,473	82,388
Teletype rentals..	76,417	55,165
Staff training.....	85,230	143,524
Recoverable expenditures.....	39,884	(35,716)
Central stores — increase in stock.	67,544	34,586
	\$ 5,614,658	\$ 5,310,012

STATEMENT I (Cont'd)

Head Office --

General administrative and oper-

ating staff..... \$ 3,693,486

\$ 3,468,302

Travelling expenses..... 304,888

345,030

Electronic Section -- salaries and

equipment rentals..... 176,673

170,500

Sundry..... 460,349

433,468

\$ 4,635,396

\$ 4,417,300

Roads publicity, etc..... 125,116

162,616

Burlington Bay Skyway -- toll collection costs..... 177,306

164,963

Municipal Subsidies --

County roads..... \$ 5,236,221

\$ 4,936,346

Township roads..... 12,072,474

11,489,112

Cities, towns and villages..... 8,702,582

\$26,011,277

8,070,573

\$24,496,031

TOTAL ORDINARY EXPENDITURES.....

\$71,563,798

\$73,193,762

PER PUBLIC ACCOUNTS

Total Ordinary expenditures, as
above.....

\$71,563,798

\$73,193,762

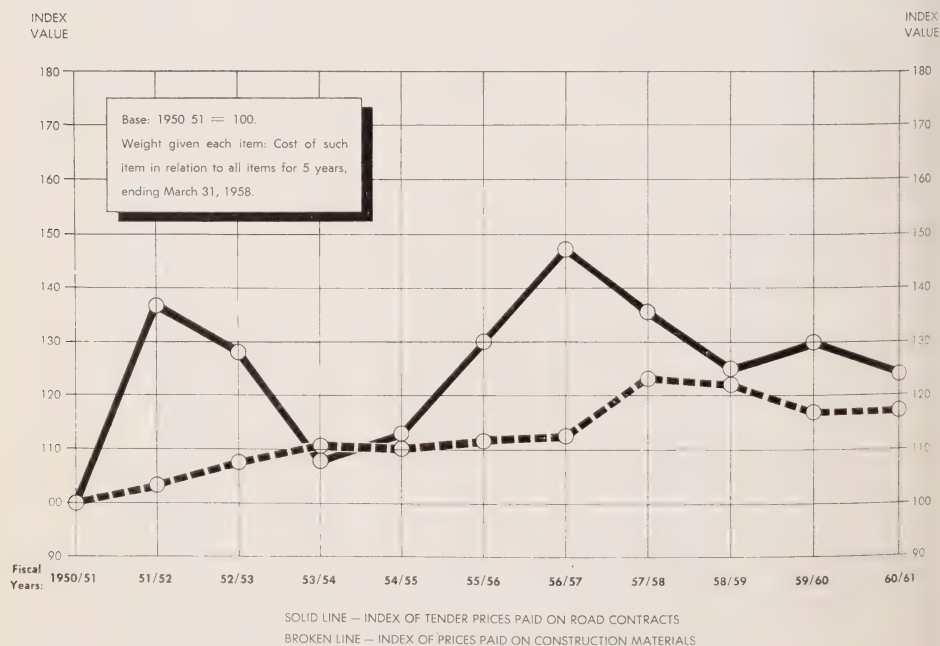
Transfer of funds to Highway Con-
struction Account.....

15,000,000

TOTAL ORDINARY EXPENDITURES PER
PUBLIC ACCOUNTS.....

\$71,563,798

\$88,193,762



STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1961 and March 31, 1960

	YEAR ENDING MARCH 31, 1961	YEAR ENDING MARCH 31, 1960
Construction of King's Highways and Secondary Highways —		
Payments to contractors.....	\$ 70,125,566	\$ 79,110,499
Materials and sundry contract expenditures.....	31,163,167	33,284,432
Engineering.....	10,680,363	10,739,315
	\$111,969,096	\$123,134,246
Construction of development roads.....	7,995,256	7,674,741
Construction of roads in unincorporated townships in Northern Ontario	491,494	421,206
	\$120,455,846	\$131,230,193
Expenditures allocated to the above roads —		
Property purchases	\$ 7,896,840	\$ 9,350,376
Land surveys.....	2,056,628	2,574,538
Planning and design	3,502,655	3,780,681
	\$ 13,456,123	\$ 15,705,595
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.).....	\$133,911,969	\$146,935,788
Expenditures of Head Office branches unallocated and not included above —		
Property.....	\$ 1,388,184	\$ 1,283,028
Land surveys.....	908,740	1,344,068
Planning and design.....	2,517,121	2,341,845
Construction of new buildings....	548,640	488,907
Soils testing and research.....	2,277,545	1,988,619
Engineering audit.....	620,827	611,444
Increase (decrease) in Bailey bridge and steel inventories....	(213,584)	396,824
Recoverable expenditures — net.	(446,022)	1,922,934
Electronic Section — salaries and equipment rentals.....	222,500	195,465
Sundry.....	74,844	52,423
	\$ 7,898,795	\$ 10,625,557
Municipal Subsidies —		
County roads.....	\$ 12,377,174	\$ 12,158,175
Township roads	13,077,629	11,887,615
Cities, towns and villages.....	18,978,238	13,820,388
	44,433,041	37,866,178
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION.....	\$186,243,805	\$195,427,523
Less Recoveries —		
Trans-Canada Highway.....	\$ 16,500,840	\$ 17,662,422
St. Lawrence Seaway.....	—	206,798
Ottawa Queensway.....	1,367,729	773,681
Railway bridges.....	1,945,017	1,464,189
	19,813,586	20,107,090
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS.....	\$166,430,219	\$175,320,433

STATEMENT II (Cont'd)

EXPENDITURE SUMMARY

Ordinary expenditure.....	\$ 71,563,798	\$ 73,193,762	
Capital payments — net.....	166,430,219	175,320,433	
	\$237,994,017		\$248,514,195
Transfer to Highway Construction Account..			15,000,000
TOTAL.....	\$237,994,017		\$263,514,195

STATEMENT III

TRANS-CANADA HIGHWAY

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway since the signing of the agreement with the Federal Government on April 24, 1950 and the supplementary agreements signed July 27, 1956 and November 9, 1960.

	REFUNDABLE BY FEDERAL GOVERNMENT	EXPENDED BY DEPARTMENT
Refunded by Federal Government on account of work performed prior to April 24, 1950.....	\$ 1,569,640	\$.....
Year ending March 31, 1951.....	2,749,329	7,043,559
" " " 1952.....	3,453,866	8,242,801
" " " 1953.....	4,103,753	11,746,130
" " " 1954.....	2,486,860	9,686,452
" " " 1955.....	6,274,487	5,675,343
" " " 1956.....	3,365,959	9,602,299
" " " 1957.....	4,855,053	13,996,280
" " " 1958.....	12,381,361	20,683,306
" " " 1959.....	15,803,757	27,995,777
" " " 1960.....	17,662,423	28,412,552
" " " 1961.....	16,500,840	24,786,757
Expenditures by Department for property and other non- recoverable expenditures.....		8,217,632
TOTALS TO MARCH 31, 1961.....	\$ 91,207,328	\$176,088,888
Further claims to be submitted based on expenditures to March 31, 1961 — Claim No. 93.....	\$ 1,125,524	
" " " " No. 94.....	495,395	
" " " " No. 95.....	1,694,512	
" " " " No. 96.....	90,000	
TOTAL REFUNDS BY FEDERAL GOVERNMENT.....		\$ 94,612,759
NET ESTIMATED COST TO MARCH 31, 1961.....		\$ 81,476,129

STATEMENT IV

THE "QUEENSWAY" — OTTAWA

The following statement sets out expenditure and amounts recoverable on the "Queensway" Ottawa since the signing of the Agreement with the Federal Government, the Federal District Commission and the City of Ottawa on March 19, 1957.

STATEMENT IV (Cont'd)

EXPENDED BY DEPARTMENT:

Year ending March 31, 1958.....	\$ 563,956	
" " " 1959.....	1,720,076	
" " " 1960.....	3,860,475	
" " " 1961.....	5,723,245	
		\$11,867,752

RECOVERED FROM FEDERAL GOVERNMENT:

Year ending March 31, 1958.....	\$ 204,500
" " " 1959.....	109,221
" " " 1960.....	773,681
" " " 1961.....	1,367,729
	\$2,455,131

AMOUNTS TO BE RECOVERED FROM:

The Federal Government.....	\$ 352,825	
The City of Ottawa.....	2,095,426	
The Federal Government and the City of Ottawa — in process.....	1,030,494	\$3,478,745

TOTAL RECOVERIES..... \$ 5,933,876

NET ESTIMATED COST TO MARCH 31, 1961..... \$ 5,933,876

STATEMENT V

STATEMENT OF RECEIPTS

For the Fiscal Years Ending March 31, 1961 and March 31, 1960

	YEARS ENDING	
	MARCH 31, 1961	MARCH 31, 1960
Sales of land and buildings.....	\$ 997,738	\$1,244,500
Property rentals.....	296,783	253,622
Sale of services and materials.....	356,885	380,781
Permits — sign and housemoving.....	45,325	52,661
Gas pump revenue.....	37,115	40,620
Gas line franchises.....	9,730	9,330
Burlington Bay Skyway.....	668,255	612,020
Miscellaneous.....	73,010	55,341
TOTAL RECEIPTS.....	\$2,484,841	\$2,648,875
Distribution —		
Ordinary revenue.....	\$1,457,040	\$1,386,634
Capital receipts.....	1,027,801	1,262,241
	\$2,484,841	\$2,648,875

STATEMENT VI
COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS
(Items used for price index purposes)

For period April 1, 1950 to March 31, 1961

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Exca- vation Cu. Yd.	Rock Exca- vation Cu. Yd.	Gran- ular "A" Ton	Gran- ular "B" Ton	$\frac{3}{4}$ " Crushed Gravel "A" Ton	$\frac{3}{4}$ " Crushed Gravel "B" Ton	Bitu- minous Hot Top Course Ton	Bitu- minous Hot Base Course Ton	Sand Cushion Ton	Earth Com- paction Cu. Yd.	Com- paction Equip- ment Hour	Water for Com- paction M. Gal.	Concrete in Culverts Cu. Yd.	Concrete in Struc- tures Cu. Yd.	Struc- tural Steel Fabri- cation Ton	Struc- tural Steel Erec- tion Ton
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	.....	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	.....	4.56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	5.13	3.91	.79	.....	6.29	4.37	27.90	37.77	246.28	63.69
1960/61	157.89	161.49	.43	1.81	1.26	.71	1.55	1.37	4.68	4.11	.70	.....	6.49	3.81	26.33	32.66	277.75	75.32

STATEMENT VII

BURLINGTON BAY SKYWAY

COMPARATIVE STATEMENT OF TOLL COLLECTION REVENUES
AND EXPENDITURES

For the Years Ending March 31, 1961 and 1960

	YEAR ENDING MARCH 31, 1961	YEAR ENDING MARCH 31, 1960	INCREASE	PERCENTAGE INCREASE
REVENUES:				
Toll Revenue Earned —				
Class I vehicles.....	\$ 594,466	\$ 543,154	\$ 51,312	9.4%
Class II vehicles.....	33,583	28,835	4,748	16.5%
Class III vehicles.....	34,455	32,149	2,306	7.2%
Total Revenue Earned.....	\$ 662,504	\$ 604,138	\$ 58,366	9.7%
Plus — Tickets sold but not presented.....	8,597	11,996	(3,399)	
	\$ 671,101	\$ 616,134	\$ 54,967	
Less — Discount on U.S. Funds.....	2,846	4,114	1,268	8.9%
Total Revenue.....	\$ 668,255	\$ 612,020	\$ 56,235	9.2%
EXPENDITURES:				
Toll operating staff salaries.....	\$ 143,977	\$ 137,930		
Travelling expenses.....	422	1,020		
Office expenses and stationery.....	5,485	4,325		
Uniforms and raincoats.....	2,171	2,365		
Light, heat, water, tele- phone, etc.....	10,344	2,616		
Maintenance of building.....	1,253	869		
Maintenance of equipment.....	3,577	5,755		
Rental of equipment.....	10,077	10,083		
	\$ 177,306	\$ 164,963	\$ 12,343	7.5%
Excess of Revenues over Expenditures.....	\$ 490,949	\$ 447,057	\$ 43,892	9.8%
TRAFFIC:				
Class I vehicles.....	6,119,236	5,440,859	678,377	12.5%
Class II vehicles.....	148,167	126,918	21,249	16.7%
Class III vehicles.....	97,773	90,740	7,033	7.8%
Total.....	6,365,176	5,658,517	706,659	12.5%
			CASH	TICKETS
TOLL RATES:				
Class I vehicles (passenger cars and trucks under one ton capacity).....			15c.	5c.
Class II vehicles (passenger cars with trailers and trucks with two axles and more than one ton capacity).....			25c.	16 ² / ₃ c.
Class III vehicles (trucks with three axles or more and public vehicles).....			45c.	30c.

SUMMARY REPORT OF THE CHIEF ENGINEER

by **W. A. CLARKE, P.Eng.,** *Chief Engineer*

Once again this fiscal year ending March 31, 1961 saw a continuance of a record rate of all phases of highway engineering and construction covering from the statistical and planning stage through the phases of design and construction, to the ultimate stage of maintenance. This was accomplished through many varied aspects, ranging from an expansion of new electronic techniques to regionalizing of certain operations.

Beginning at the statistical stage, the Department's Statistical Section, in addition to expanding its services as to the quantity of research projects, made further progress in fields of statistical studies pertinent basically to highway and bridge inventory data, urban planning studies, and rural transportation studies. Allied with this work a major research project was begun into the subject of a policy review on municipal road and street subsidies for Ontario.

In connection with traffic studies, a significant accomplishment this year was the completion of the inaugural year of the traffic control sub-section on a regional basis in the southwestern region of the Province, resulting in a much closer co-ordination of all services at the more localized level. It is anticipated that a further expansion will include an establishment in the eastern region next year. Highlighting the projects undertaken or completed this year by the Traffic Section was the adoption of a committee to formulate a traffic field survey manual, the completion of an analytical study of the relative merits of an overhead versus subway at the Welland Canal, and finally the preparation of a manual of "Summary of Accident and Fatal Accident Analyses" for 1957, 1958 and 1959.

Progressing through the location survey operations a most significant contribution was made in this vein, particularly for location of resources roads, parks roads and forestry roads, due to the acceleration of Dominion-Provincial programs and agreements concerning roads of these types. Acceleration of these projects therefore occasioned a great impetus on photogrammetry investigations into some areas hitherto practically inaccessible.

In respect to road design operations, apart from the continued peak production of all types of projects of the previous year, one feature was the further exploitation of electronic computation and programming and processing in regard to computation of elevations, considering horizontal and vertical alignments, calculation of alignment data for cloverleaves and finally obtainment of preliminary quantity estimates from cross-sections produced photogrammetrically. Another feature was the favourable results produced in the inaugural operative year of the southwestern regional planning office involving our four western districts by the effective local liaison so obtained. Advancing its previous estimating and highway standards manuals, many revisions and up-dating data were produced by the Design Division, and these manuals have received very favourable comments from other provincial highway authorities and highway consulting firms.

Bridge work this year witnessed a marked increase in the use of prestressed concrete and a definite trend toward all-welded steel plate girder designs. This year also saw a steady upsurge in the electronic computer use for the solution of

structural problems with well over a thousand structural problems being so processed.

Repetitive of the previous years, progress on completed capital projects this year witnessed the openings of vitally important sections of the trans-provincial Highway 401, the Trans-Canada Highway and the Ottawa Queensway, the high level bridge over the Welland Canal at Homer, and the Port Frances Causeway, which are all covered in detail in the subsequent district summaries following. In keeping with such rate of completion along these important arteries, contracts for all types of grading, paving and structures, were called this year to ensure rapid final completion of these prestige routes.

As the mileages of the newly constructed roads are increased, so of necessity the maintenance operations have to be geared to provide the high quality of services expected by the travelling public.

An increased program of pavement patching, shoulder repairs, grass cutting, weed spraying, tree planting and spraying, tree removal, bridge inspection and repairs, zone painting, highway signing, traffic and flasher light installation, winter maintenance, day labour work and asphalt operation, was carried out this year. This year witnessed the first full year's operations of the Department's new tree saving machine, which performed most adequately in carrying out tree transplanting on a very time saving and cost saving basis.

Once again the winter employment program carried out by our day labour forces, involving thousands of men, was accelerated to handle unemployment situations, such work consisting of highway repairs, landscaping, clearing, grubbing and fencing. Picnic sites and roadside parks were given special prominence in this relief of unemployment and offered work for a large percentage of local labour.

The foregoing has simply been a digest of the major achievements of this year and the following sectional breakdown illustrates in complete detail the expanded operations of the Department.

OPERATIONS BRANCH

H. W. ADCOCK, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P.Eng.
Construction Engineer

*Regional
and
District
Engineers*

MAINTENANCE
C. Tackaberry, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

Construction during the 1960–61 fiscal year continued at a high rate.

Good progress was made on the three major projects which the Department has under way — Highway 401, The Trans-Canada Highway and the Ottawa Queensway. In addition to the considerable work carried out on each of these projects, construction was started on two additional major projects, the Homer Bridge and the Chedoke Expressway.

Reconstruction of main and secondary highways was carried out along with the construction of new roads to serve better the increasing needs of the travelling public in all sections of the Province.



Monument commemorating opening of the last link of the Lake Superior route of the Trans-Canada Highway on September 17, 1960, at Wawa by The Honourable Leslie M. Frost, Q.C., LL.D., D.C.L., Prime Minister of Ontario.

Some of the more important work carried out in 1960-61 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford, Owen Sound Districts.

Good progress was made on the construction of Highway 401 in this area. Grading was completed on the Tilbury By-pass and grading was commenced from the east end of the By-pass easterly. Grading was started from Highway 4 west for eleven and one-half miles. Between Eastwood and Highway 8, a distance of twenty-six miles, grading, drainage and structures were 95% completed.

Construction of a semi-controlled access highway was started on a new portion of Highway 39 from the town of Tecumseh easterly to the Puce River.

Reconstruction of Highway 40 from Chatham northerly was completed and the reconstruction and resurfacing of Highway 2 from the Kent-Middlesex boundary to Thamesville was completed.

On Highway 3, grading, granular base and hot mix paving from Tillsonburg west for 9.3 miles was completed.

Grading, culverts, granular base and hot mix paving work was carried out on Highway 97 from Galt westerly for seven miles.

The reconstruction of Highway 19 was finished from Woodstock northerly for 8.7 miles; from Stratford to Milverton a distance of 16.25 miles, and good progress was made from Hickson to Shakespeare.

Work commenced on a major project on Highway 21 at Goderich, which includes an overhead structure over the C.N.R., a bridge over the Maitland River and a subway under the C.P.R., together with the necessary grading, granular base and paving work.

On Highway 4 immediately west of Hanover two structures were built: one over the C.N.R. and the other over the Saugeen River.

Grading and paving were completed from Camilla to Primrose on Highways 10 and 24 and on Highway 93 from Crownhill to Craighurst.

Several miles of twisting, narrow road were eliminated with the completion of a grading contract on Highway 6 on the Bruce Peninsula, from Ferndale to Miller Lake.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts.

The new section of Highway 401 from Highway 25 to Highway 8 was completed and opened to traffic. Access to Highway 401 between Highway 25 and Oshawa will be completely controlled with the completion of structures and service roads now under way east of the Rouge River. Another new section of Highway 401 between Newcastle and Highway 28 was completed and opened for travel. From Highway 28 to Highway 30 grading and structures were completed and paving was well under way. The twin structure on Highway 401 over Hogg's Hollow, west of Yonge Street, was well on its way to completion, as was the widening of the overpass at Yonge Street. These contracts are the beginning of the extensive work required to widen Highway 401 through Metropolitan Toronto.

The first preliminary contracts for the construction of the Homer Skyway were completed and construction of the substructure and piers was started.

This structure will carry the Q.E.W. over the Welland Canal and thereby eliminate the disruption of Q.E.W. traffic by ships passing through the canal.

Construction of another large project, the Chedoke Expressway, was also commenced. This is a four-lane, controlled access highway comprising the section of Highway 403 which passes through the city of Hamilton.

The grading and paving of Highway 6 from Caledonia to Hagersville was completed.

Good progress was made on the work of controlling access to the Q.E.W. and of increasing its capacity. Widening of the structures over the Oakville Creek and the Credit River were virtually completed and the interchanges at Bronte and Shook's Hill were completed. A contract was awarded for the widening of the Q.E.W. to six lanes from Highway 27 to Highway 10.

The last level crossing on Highway 400 between Toronto and Barrie has been eliminated with the completion of the structure over the C.N.R. in Innisfil Township.

On Highway 7 T.C.H. in the Peterborough area, grading and paving were completed for eight miles, from Fowlers Corners southerly and on the Peterborough By-pass, grading, two railway overpasses and the structure over the Otonabee River were completed.

Grading of the Gamebridge By-pass, Highway 12 T.C.H. was completed.

On Highway 7A from Highway 35 to Bethany grading and paving were finished.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts.

Considerable work was carried out on Highway 401 in this area. Grading was in progress from west of Napanee to Odessa and from Odessa to Highway 38, grading was completed and a paving contract awarded. The paving of the south lane from Rockport easterly to Crystal Beach was finished. The Brockville Prescott By-pass was completed and opened to traffic.

Good progress was made on the interchange at Highway 401 and Highway 16 and grading and culvert work was carried out on the south lane from Highway 16 to the Iroquois Road.

In the Cornwall area grading of the south lane was completed from east of St. Andrews Road in Cornwall to Summerston County Road. The C.N.R. overpass east of Cornwall and the Raisin River Bridge at Lancaster were also finished.

At Stirling, the intersection of Highways 33 and 14, a grading, paving and drainage contract was finished and paving was completed on Highway 38 from Glenvale to Hartington.

On Highway 15 from Elgin to Morton, grading was done and base course pavement was laid before winter. Also on Highway 15 a grading and culvert contract was awarded from Morton to south of Seeley's Bay. A grading, paving, drainage and curb and gutter contract was started from the La Salle Causeway to the intersection of Highways 2 and 15, including a revised entrance to Fort Henry.

The Carleton Place By-pass, Highway 15 T.C.H., was paved and from Carleton Place to Innisfil was resurfaced.

Work commenced in October on the Manotick By-pass portion of Highway 16 and good progress was made.

Considerable progress was made on the important Ottawa Queensway. Stage 1 from the East City Limits to Hurdman's Bridge was opened to traffic and only minor trim work and some lighting is required to complete this section.

The grading and structures on the second stage of the Ottawa Queensway, from Highway 15 to the Carling Avenue interchange, have been completed and concrete paving is well under way.

On the third stage of the Ottawa Queensway, from Carling Avenue to Bell Avenue, grading and drainage work is in the early stages and six structures are in various stages of completion.

The bridge over the Madawaska River at Combermere was opened to traffic and Highway 62 from Combermere to Barry's Bay was paved. Paving was also completed on Highway 41 from Kaladar to Northbrook.

Grading on Highway 60 between Wilno and Barry's Bay was completed and good progress was made on a grading and paving contract on sections of Highway 132 between Dacre and Renfrew.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury and Sault Ste. Marie Districts.

The widening of Highway 11 from Crown Hill to the south end of the three-lane pavement north of Orillia was completed. Grading, granular base and paving were completed on Highway 11 from the north limits of Sundridge to 8 miles south. Sections of Highway 11 from the north end of the Callander By-pass to the west end of the North Bay By-pass and from one mile south of Trout Creek to two miles north of Powassan were paved.

Paving was completed on Highway 400 from Highway 93 to Highway 12 and on the Coldwater By-pass. The newly built sections of Highways 109, 111 and 500 in the Bicroft area were also paved as was the section of Highway 118 from Bracebridge westerly for 4.5 miles.

On Highway 17, grading, granular base and paving were completed from Highway 94 to Secondary Road 531, and from Chalk River to Deep River paving was carried out.

Grading work on Highway 69 T.C.H. from Hayes Corners to two miles north of Nobel including the Parry Sound By-pass was started and carried on throughout the winter. Between Pointe-au-Baril and Magnetawan Bay, grading was completed and paving started. Paving was carried out from the Magnetawan River to the French River, over an existing mulch surface.

Grading on the new Killarney to Burwash road progressed favourably leaving only a gap of six and one-half miles to be completed.

West of Sudbury on Highway 17 T.C.H. paving between Vermilion River and Whitefish was completed.

The Spanish River Bridge at Espanola was opened, greatly improving the north entrance to the town. South of Espanola the second new grading contract on Highway 68 to eliminate the old twisting road was finished.

In the New Liskeard area, Highway 11 from New Liskeard to Earleton and from Monteith to Porquis Junction was paved. The main street in Kirkland Lake was rebuilt and paved and Highway 66 was paved for 17 miles east of the town. On Highway 65 bridges over the Blanche River and over the Wright Creek were opened to traffic. The Montreal River Bridge at Latchford on Highway 11 was opened early in the summer.

Construction of the Resources Road from Foleyet to Chapleau continued. The bridge over the Ivanhoe River at Foleyet was completed and before closing down for the winter the road had been built to twenty miles west of Foleyet.

Grading, granular base and paving operations were started on Highway 17 T.C.H. east and west of Blind River. North of Sault Ste. Marie grading was finished from Sault Ste. Marie to Havilland Bay. Base course pavement was laid on 19 miles of this section which also included four structures over the Root River and a major structure over the Goulais River.



Construction on Minaki Resources Road (Kenora District).

NORTHWESTERN AREA—White River Project, Cochrane, Fort William and Kenora Districts.

With the paving of Highway 11 from two miles south of Driftwood to three miles north, the reconstruction of Highway 11 was completed from Cochrane to Strickland. Paving was also carried out from Cochrane to 10 miles south and paving continued between Kapuskasing and Hearst. Two bridges at Kapuskasing were built and officially opened to traffic on October 28, 1960.

The section of Highway 17 T.C.H. between Marathon and the Agawa River, called "The Gap," was officially opened on September 17, 1960. A full depth of pavement was laid throughout, with the exception of two sections, one north and the other south of Wawa on which base course only was laid. Two large steel truss bridges were completed in this section, one at the Agawa River and the other at White Lake Narrows.

West of Marathon on Highway 17 construction continued. Grading and paving were completed from Jackfish Lake to the Schreiber overhead and the grading west of Schreiber was virtually completed. From west of Cavers to 10 miles east of Nipigon grading is well under way and should be completed next season. Base course paving was laid from the west end of the Selim Diversion to Cavers, from Nipigon easterly for 10 miles and from Amethyst to Coldwater Creek.

West of Fort William on Highway 17 T.C.H. grading was completed and base course paving laid from 7.5 miles north of the junction of Highway 11 to Poland. Paving was completed from Butler to Ignace and from 2.5 miles west of Raleigh to 1.5 miles east of Butler.

On Highway 11 grading was approximately 90% completed on the first 10-mile section of the Atikokan to Fort Frances road.

Grading on Highway 17 T.C.H. from Longbow Corners easterly for 19 miles was nearing completion and another grading contract was started which will connect this section with the section west of Highway 105, where paving was started in the late summer of 1960.

On the Rainy Lake Causeway good progress was made on the construction of the low level bridges with deck work started. Work has also commenced on the high level bridge.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1960-61

Hwy. No.	4-Lane Highways	Miles
401	Hwy. 25 to Hwy. 6.....	12.47
401	Hwy. 6 to 2.47 miles west of Hwy. 24.....	12.93
401	Hwy. 115 to Hwy. 28.....	17.77
401	Hwy. 2 interchange to Edward St., Prescott.....	18.41
Q'way	Rideau River easterly to Jct. of Hwy. 17.....	5.72
TOTAL		67.30

2-Lane Highways

400	Crownhill to Craighurst.....	10.04
400	Craighurst to Coldwater.....	11.90
12	T.C. Coldwater By-pass.....	2.74
15	T.C. Carlton Place By-pass.....	1.90
11	Huntsville By-pass.....	7.07
11	Hunta Diversion.....	7.66
17	Heyden to Goulais River.....	6.77
71	Approaches to Rainy River International Bridge.....	2.00
17	From 3 mi. south of the Agawa River northerly.....	18.84
17	From 15 mi. north of the Agawa River northerly.....	14.50
17	From 6 mi. south of the Michipicoten River southerly.....	13.30
17	From 10 mi. north of Wawa to 6 mi. south of the Michipicoten River.....	18.84
17	From 28 mi. east of White River to Bedpan Lake.....	9.60
17	C.P.R. Overhead east of White River easterly.....	20.10
17	White River Narrows easterly.....	9.35
TOTAL		154.61

SUMMARY OF NEW BRIDGES COMPLETED 1960-61

During the fiscal year 1960-61 the number of structures completed was..... 93

MAINTENANCE

C. TACKABERRY, P.Eng.—Maintenance Engineer

Inspection and Maintenance of Bridges

During 1960 the Bridge Maintenance Section inspected and reported on some 800 bridges. From these reports, required bridge repairs were planned and scheduled. The work, for the most part, was carried out by Regional or District bridge repair crews. In some instances, due to the nature of the work, contractors or steel companies were called in to perform the work under D.H.O. inspection.

Besides minor repairs to numerous structures, major repair work was performed on 38 bridges. This repair work consisted of replacement of concrete decks, ballast walls, bridge seats, reinforcing or replacing steel components of steel trusses and repairing concrete showing disintegration. The Department is continually trying new techniques in the repairing of disintegrating concrete. This year we experimented with new methods and materials in the repair of concrete decks. Experimenting with new methods to prevent or retard disintegration of concrete surfaces was also carried out.

In order to determine the extent of deterioration of concrete decks we inspected numerous bridges by drilling cores. This method will be continued as part of our bridge inspection program and will be increased in future years.

Further progress was made in the replacement of frozen expansion bearings. New materials, continually being developed, are used by the Bridge Maintenance Section to release the large structures from excessive internal forces.

The Credit River Bridge on the Q.E.W. showed deterioration of the concrete cross beams at the piers. These beams were rebuilt by contract without serious interruption of traffic.

The Rouge River Bridge on Highway 2, consisting of a series of simply supported deck trusses, was inspected and serious corrosion at the steel connections was detected. The bridge was closed and immediate repairs were carried out by a steel contractor.

An inspection of the high level bridge on Highway 5 at Paris revealed heavy corrosion of steel cross beams supporting the concrete deck. The serious condition necessitated a temporary detour over city bridges. Immediate repairs were started by three regional bridge crews and a steel contractor. The bridge was reopened within two weeks.

The replacement of the Driftwood River Bridge at Shillington was started in 1960. The new structure is a 276-foot-long creosoted timber bridge with composite timber and concrete deck and is being constructed by the district bridge crew.

Department-owned Hot Mix Plant

The plant, operating on Highway 11 from a gravel pit 10 miles west of Cochrane and a quarry 16 miles west of Kapuskasing, produced during the season 81,587.95 tons of mix which represents 56.2 miles of paved highways.

Zone Painting

Operating continuously throughout the summer months our 16 single and 5 dual zone striping machines painted 9,336 miles of King's Highways and Secondary Highways plus 445 miles of county roads. One new dual type striping machine was built during the winter in our shops at Downsview for use in 1961.

Signs

This important phase of our operations continued with many new sections of highways being signed. During the year our districts erected or replaced some 66,000 signs of various types and sizes, ranging from fingerboards and stop signs to the larger freeway and overhead metal signs.

Electrical

During the year April 1, 1960 to April 1, 1961, new street lighting installations were completed at 36 locations, totalling 677 lights.

New traffic signals were installed at 21 locations.

New flashing signals were installed at 53 locations.

The various jobs done, according to district and type of job, are listed at the end of this section.

The larger street lighting jobs include: the interchange at Highway 401 and Wellington Road, London; the large rotary interchange at Q.E.W. and 5th Line (Shooks Hill); the interchange at Highway 401 and Highway 115 and part of Stage 11, Ottawa Queensway.

The lighting installed on the Ottawa Queensway can be considered "prestige lighting," and consists of silver-white mercury vapour lamps mounted on single davit aluminum poles, and presents a very pleasing appearance, both by day and by night.

Some traffic signals installed during the year had special features as follows:

Two signals on the Q.E.W. at Stanley Street and at MacDonald Ave., Niagara Falls, were co-ordinated and interconnected.

The fully actuated signal at Highway 2 and Highway 122 has a 3-phase

DISTRICT 6 — TORONTO

- 6-Q.E.W.-9 Q.E.W. and Credit River Bridge
(10) 400-watt mercury vapour units.
- 6-Q.E.W.-20 Q.E.W. and Oakville Bridge
(8) 400-watt mercury vapour units.
- 6-Q.E.W.-24 Q.E.W. and Bronte Bridge
(8) 400-watt mercury vapour units.
- 6-Q.E.W.-58 Q.E.W. and Shooks Hill
(104) 400-watt mercury vapour units.
- 6-122-70 Hwy. 122 and Ninth Line
(14) 400-watt mercury vapour units.
- 6-48-74 Hwys. 47 and 48, Ringwood
(1) 400-watt mercury vapour units.
- 6-7-77 Hwy. 7 and Bayview
(8) 400-watt mercury vapour units.

DISTRICT 7 — PORT HOPE

- 7-133-10 Hwys. 28, 133, 7, Peterborough
(12) 400-watt mercury vapour units.
- 7-401-11 Hwy. 401 and Shelter Valley County Rd.
(5) 2-lamp fluorescent units.
- 7-401-12 Hwys. 401 and 115
(76) 400-watt mercury vapour units.
- 7-401-14 Hwys. 401 and 28
(8) 400-watt mercury vapour units.

DISTRICT 8 — KINGSTON

- 8-2-11 Hwys. 2 and 15, Kingston
(21) 400-watt mercury vapour units.
- 8-7-12 Hwy. 7 and Lanarx Rd.
(7) 400-watt mercury vapour units.

DISTRICT 9 — OTTAWA

- 9-17-5 Hwy. 17 and Allumette Island Bridge Entrance
(15) 400-watt mercury vapour units.
- 9-7-6 Hwys. 7 and 15, Perth
(7) 400-watt mercury vapour units.
- 9-Q-9 Ottawa Queensway
128 additional poles were installed on Stage II.

DISTRICT 11 — HUNTSVILLE

- 11-11-5 Hwys. 11 and 11B, Forest Home
(22) 400-watt mercury vapour units.
- 11-11-9 Hwy. 11 at south end of Huntsville By-pass
(18) 400-watt mercury vapour units.
- 11-11-10 Huntsville By-pass (Hwy. 11) at entrance to Huntsville Twp. Rd.
(10) 400-watt mercury vapour units.
- 11-11-11 Hwy. 11 at north end of Huntsville By-pass
(18) 400-watt mercury vapour units.
- 11-12-18 Hwy. 12 at C.P.R. Subway, west of Victoria Harbour
(2) 400-watt mercury vapour units.

11-11-19 Hwys. 11 and 11B, north end of Orillia
 (40) 400-watt mercury vapour units.

DISTRICT 13 — NORTH BAY

13-17-13 Hwys. 11 and 17, North Bay
 (13) 400-watt mercury vapour units.

DISTRICT 16 — COCHRANE

16-11-3 Hwy. 11 and Kapuskasing River
 (8) 400-watt mercury vapour units.

TRAFFIC SIGNALS

DISTRICT 1 — CHATHAM

1-2-98-18 Hwys. 2, 98 and Eugenie St. Fixed time (temporary).
1-39-19 Hwy. 39 and Lauzon Rd. Fully traffic actuated.

DISTRICT 2 — LONDON

2-135-8 Hwy. 135 and Wellington Rd. Fully traffic actuated.

DISTRICT 3 — STRATFORD

3-24-3 Hwy. 24 at Hespeler.

DISTRICT 4 — HAMILTON

4-Q.E.W.-7 Q.E.W. and Stanley St. Semi-actuated.
4-Q.E.W.-48 Q.E.W. and MacDonald Ave. Semi-actuated.
4-6-51 Hwys. 6 and 54, Caledonia. Fully traffic actuated.
4-58-53 Hwys. 3A, 58 and 20, Turner's Corners.

DISTRICT 5 — OWEN SOUND

5-89-2 Nottawasaga Bailey Bridge, Hwy. 89 east of Alliston. Fixed time
 (temporary).
5-27-3 Hwys. 27 and 32, Elmvale. Fully traffic actuated.
5-10-5 Hwy. 10 and Holland Centre Bridge. Fixed time (temporary).

DISTRICT 6 — TORONTO

6-5-13 Hwys. 5 and 10, Cooksville. Fixed time.
6-2-70 Hwy. 2 and Clarkson Rd. Fully traffic actuated.
6-2-71 Hwy. 2 and Lorne Park. Fully traffic actuated.
6-2-77 Hwys. 2 and 122. Fully traffic actuated.
6-11-78 Hwy. 11 at Murray Drive. Semi-actuated.
6-122-81 Hwy. 122 and 9th Line. Fully traffic actuated.
6-7-84 Hwy. 7 and Bayview Ave. Fully traffic actuated.
6-5-75 Hwy. 5 and Cawthra Rd. Fully traffic actuated.

DISTRICT 8 — KINGSTON

8-2-4 Hwy. 2 at R.C.O.C. Camp, Barriefield. Fully traffic actuated.

DISTRICT 17 — SUDBURY

17-17-4 Hwy. 17 and Martindale Rd., Sudbury. Fixed time synchronized
 with railway wig-wag.

FLASHING BEACONS

DISTRICT 1 — CHATHAM

- 1-2-6 Hwys. 2 and 401 merging, west of Tilbury, 5 amber pedestal flashers on warning signs.
- 1-40-10 Hwy. 40, Golf Course Curve, 3.5 miles west of Wallaceburg, 2 amber flashers on checkerboards.
- 1-402-11 Hwys. 402 and 40, Blue Water Bridge, Sarnia, 1 amber flasher on "Keep Right" sign.
- 1-402-14 Hwys. 402 and 7, east of Sarnia, 1 amber flasher on "Keep Right" sign.

DISTRICT 2 — LONDON

- 2-401-26 Hwys. 401 and 4, London By-pass, 2 amber flashers on warning signs.

DISTRICT 3 — STRATFORD

- 3-6-12 Hwy. 6 and Elora Sideroad, 2 amber flashers on "Keep Right" signs.
- 3-7-100-19 Hwys. 7 and 100, 1 amber flasher overhead.

DISTRICT 4 — HAMILTON

- 4-Q.E.W.-9 Q.E.W., west of Stanley St., 1 amber flasher on "Keep Right" sign.
- 4-2-42 Hwys. 2 and 53, Duffs Corners, south installation, 1 amber flasher on "Keep Right" sign.
- 4-2-43 Hwys. 2 and 53, Duffs Corners, north installation, 1 amber flasher on "Keep Right" sign.
- 4-2-44 Hwys. 8 and 53, Duffs Corners, 1 amber flasher and two red flashers over stop signs.
- 4-3A-58-51 Hwys. 3A, 58 and County Rd. 19, 2 red flashers over stop signs.
- 4-3A-20-52 Hwys. 3A, 20 and 58 at County Rd. 18, 2 red flashers over stop signs.
- 4-20-53 Hwy. 20 at Mud St., County Rd. 11, Saltfleet Twp.
- 4-58-56 Hwy. 58, Town of Merriton, 2 amber flashers over "Keep Right" signs.
- 4-6-57 Hwy. 6, north of Wolfe Island, 1 amber flasher on warning sign.
- 4-20-58 Hwy. 20 at Allanburg, 2 amber flashers on checkerboard signs.
- 4-401-8-59 Hwys. 401 and 8, Preston West, 1 amber flasher on "Keep Right" signs.
- 4-401-8-60 Hwys. 401 and 8, Preston East, 1 amber flasher on "Keep Right" sign.
- 4-57-61 Hwy. 57 at Wellandport, 1 amber flasher overhead.
- 4-3A-57-62 Hwys. 3A and 57 (Becketts Bridge) Twp. Wainfleet.

DISTRICT 5 — OWEN SOUND

- 5-89-10 Hwy. 89 at Alliston, 1 red flasher on stop sign.
- 5-0-11 Hwys. 10 and 89, Primrose, 1 red flasher on stop sign.
- 5-24-12 Hwys. 24 and 91, 1 red flasher on stop sign.

DISTRICT 6 — TORONTO

- 6-47-48-56 Hwys. 47 and 48, Ringwood, 2 red flashers on stop signs.

DISTRICT 7 — PORT HOPE

- 7-401-18 Hwys. 401 and 115, 1 amber flasher on "Keep Right" sign.
 7-7-19 Hwys. 7 and 7B, Fowlers Corners, 1 red flasher on stop sign.
 7-401-20 Hwys. 401 and 28, 2 amber flashers on warning signs.
 7-46-21 Hwy. 46 and County Rd., Argyle, 2 red flashers on stop signs, 1
 amber flasher overhead.

DISTRICT 9 — OTTAWA

- 9-16-10 Hwy. 16, Village of Kemptville, 1 red flasher over stop sign.
 9-29-12 Hwys. 29, 15 and 15B, Carleton Place, 2 red flashers over stop signs.
 9-401-16-8 Hwys. 401 and 16, north of Prescott.
 9-17-11 Hwy. 17 entrance to Allumette Island.

DISTRICT 11 — HUNTSVILLE

- 11-11-7 Hwys. 11 and 11B, north of Orillia.

DISTRICT 14 — NEW LISKEARD

- 14-11-6 Hwy. 11 and Underwood Curve, 1 amber flasher on warning sign.

Forestry

Tree planting on new contracts was carried out to the extent of 46,530 shrubs, deciduous trees, and evergreen species. Included in the planting was landscape work on district office buildings and the administration building, Head Office.

The Department's "Tree Saving" machine accounted for the relocating and planting of 1,720 large trees. Through the use of the "Tree Saver" machine it has been possible to retain trees that would otherwise have been unavoidably destroyed to facilitate construction.

Grass seeding operations covered 5,987 acres or 28,977,080 square yards.

The testing of soil sterilant chemicals continued with further field tests. It has been established that it is possible to use soil sterilants in three areas on a limited basis:

- (a) to control all growth on the gravel shoulder of medians.
- (b) to control all growth in a limited area around guide rail.
- (c) to control all growth in a limited area around tree plantings.

Erosion control experiments are continuing with further use of fabric mesh. A special perennial legume is being sown with regular grass seed mixtures, and appears to have promise for roadside erosion problems.

Forestry and landscape crews removed some 4,870 dead and dangerous trees to maintain the safety of the travelling public.

Weigh Scales

Three new scales were installed in 1960 at the following locations:

- (1) District 2: Junction of Hwys. 53 and 2, Eastwood
 30-ton 12 x 10 axle load.



Road De-Slicker in operation. Designed and built by D.H.O., this machine has proved of great value on numerous occasions. Adjustable side-shields prevent the escape of flames from underneath the sides of the burner hood.

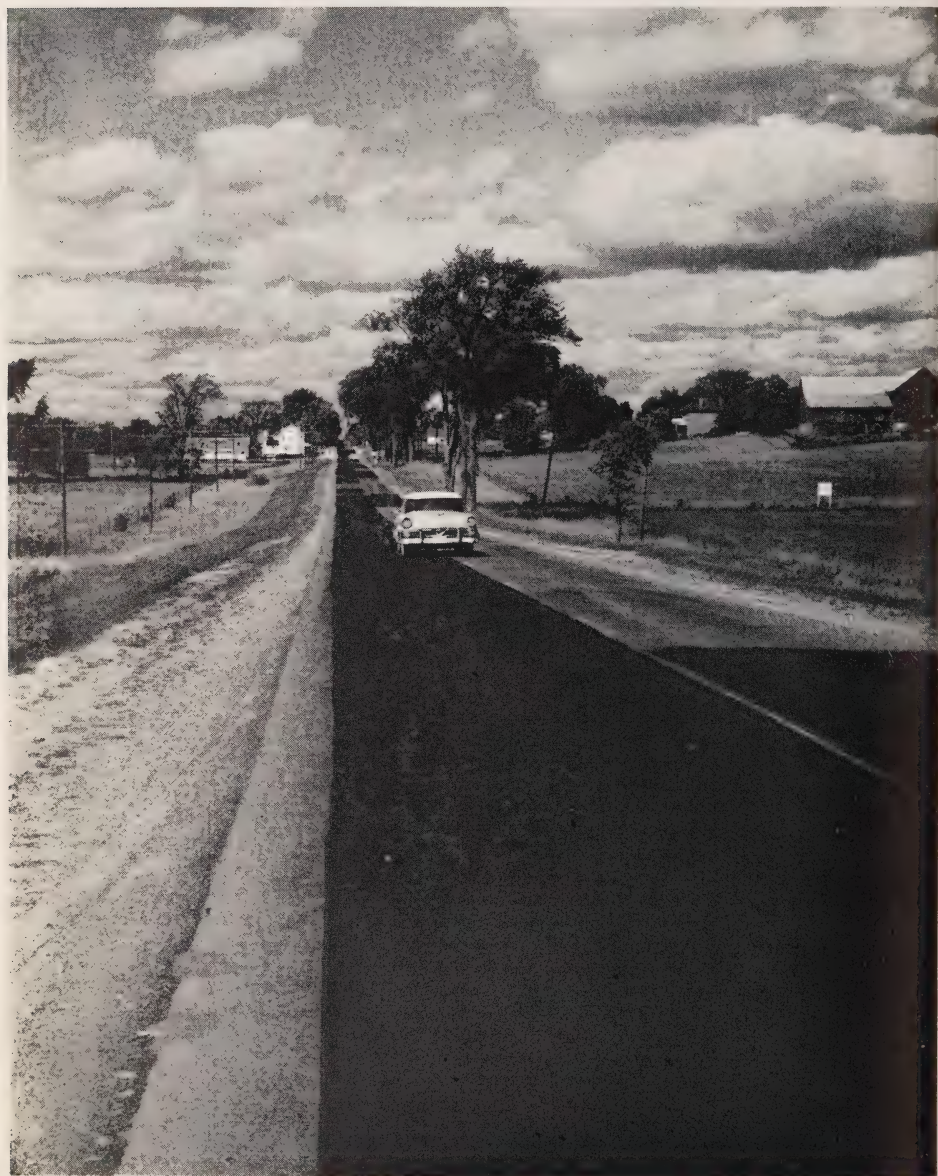
- (2) District 4: Q.E.W. east of Cherry Beach Road at Fruitland
30-ton 10 x 10 was replaced by 30-ton 12 x 10 axle load.
- (3) District 8: Hwy. 7, 4 miles west of Perth
30-ton 12 x 10 axle load.

Pavement Maintenance

Two new operations were added to our long list of techniques used in pavement maintenance.

(1) PAVEMENT DE-SLICER

Our Equipment Section constructed a machine for burning surplus asphalt from fat, slippery pavement. This machine, which we call a Pavement De-Slicker, consists of a hooded propane burner, 8 feet wide, mounted behind a three-ton truck with the 400-gallon propane tank, water tank, burner suspension, nitrogen tanks, pumps, etc., mounted on the truck platform.



Section of De-Slicked pavement.

The unit, when burning, travels at the rate of 10 feet per minute. At present this slow speed is obtained by having three regular truck transmissions in series. A later chassis, now under construction, will use a hydraulic system for the slow working speed and the regular truck transmission for travelling to and from the work site.

The machine actually burns the excess asphalt, leaving a light ash, which is quickly blown away by traffic. The pavement is softened immediately after burning to a depth of about $\frac{1}{4}$ " and resets again quickly with the appearance of freshly laid pavement.

This machine was used in Port Hope, Sudbury, and Chatham Districts, removing excess asphalt from sections of Highway 30, Campbellford to Havelock, Highway 69, Sudbury southerly and Highway 3, Wheatley to Port Alma.

These districts reported excellent results. The surfaces treated all have good traction qualities with no sign of pavement deterioration over the winter.

(2) DIX-SEAL TREATMENT OF PAVEMENT SURFACES

During the past year the Department laid three experimental sections of this new type "Dense Graded Bituminous Hot Mix Resurfacing." This material was placed on sections of highway where heavy traffic prevailed and where excessive flushing was prevalent. Results have been so satisfactory that Specification Form D.H.O. 306 has been prepared so that future work may be carried out on a regular contract basis.

Dix-Seal is not intended as a replacement for regular hot mix in which considerable strengthening is required from a relatively thicker mat. It is an ideal method for rejuvenating and presenting either a bituminous or concrete surface which shows surface disintegration in the form of ravelling, cracking or flushing, but is otherwise stable.

Winter Maintenance

During the fiscal year 1960-61 we experienced a comparatively moderate winter. Most of the districts received less frequent ice storms and lower snowfalls than usual. However, many of the northern districts experienced a very late spring with excessive rainfall.

The moderate winter enabled the districts to carry out a very successful winter employment program. This work consisted of such projects as clearing, grubbing, grading, rock excavation, granular base, fencing, bridge repairs, and bridge construction.

The Provincial and Dominion Government program for the development of picnic sites was continued as a winter employment program; with the Dominion Government contributing 50 per cent of the labour cost of this work. Under the program, 73 sites were developed.

TABLE SHOWING TOTALS OF WORK DONE, 1960-61

Class of Work	No.	Tons	Miles
Automatic signals at railway crossings.....	52		
Bituminous hot mix pavement.....		2,251,482	586
Bituminous mulch and cold mix.....		95,880	1,148
Bituminous prime on gravel roads..... Gals.	1,959,565		680
Bituminous resurfacing old pavement.....		191,212	188
Bituminous surface treatment..... Gals.	736,212		261
Bridges built.....	93		
Bridges painted.....			
Calcium dust layer — gravel roads.....		6,634	1,314
Calcium for de-icing roads.....		74	
Concrete base pavement — asphalt top..... Sq. yds.	80,880		6
Concrete pavement..... Sq. yds.	830,222		39
Crushed gravel and stone (by contract).....		6,835,449	1,505
Crushed gravel and stone (by Dept. Forces).....		541,648	5,762
Grading and culverts.....			410
Granular base on new grading.....		15,449,789	688
Granular base on old grading.....		1,823,214	1,070
New buildings erected this year.....	74		
Off-road parks maintained.....	159		
Roads snowplowed and kept open (King's Hwys.).....			9,934
Roads snowplowed and kept open (Secondary Hwys.).....			2,593
Roadside picnic places maintained.....	895		
Routine maintenance (King's Hwys.).....			9,938
Routine maintenance (Secondary Hwys.).....			2,665
Salt for de-icing roads (raw).....		118,449	
Salt in sand, stockpiled.....		43,797	
Sand for winter maintenance.....		581,332	
Scale houses maintained.....	41		
Seeding by Department Forces..... Acres	5,938		
Shrubs received and planted.....	39,021		
Signs newly erected or replaced.....	74,854		
Snow hedges planted this year.....			3
Snow fence erected, dismantled, stored.....			1,181
Traffic lights installed this year.....	24		
Weed control.....			1,693
Zone painting (King's Hwys.)..... Gals.	135,129		9,670
Zone painting (Secondary Hwys.)..... Gals.	5,651		389

CONTRACT WORK FOR 1960-61

T. C. MUIR, P.Eng.—Contract Control Engineer

This year again saw a reduction in the number of contracts awarded over the previous year, with 348 contracts of all types being awarded as compared to 393 contracts of the previous year. However, although this represents an 11.5% reduction in the number of contracts actually awarded, the actual reduction in dollar value of contracts awarded as compared to the previous year is only 7.6%. Once more this reduction in the number of contracts is primarily due to the inclusion of structures within a grading contract and particularly on contracts on Highway 401. This policy in respect to 401 is desirable since it creates less interference between the grading and structure contractor.

This year again witnessed a further increase in the instigation of the Department's qualification procedures. Whereas in 1959 past, pre-qualification was applicable to some 70% by dollar volume of all the contracts called that year, this year increased the 70% figure to 84.5%.

Similarly, the Liquidated Damages policy in Department contracts, which was an innovation in Canada by the Department, was given further impetus with approximately 80% of the total number of contracts called this year having

Liquidated Damages installed. The results of the application of the Liquidated Damages this year were most promising, in that there was a considerable improvement in the number of contracts being completed on time and this was the prime objective owing to the over-all programming required by the Department.

In 1958 a procedure was established for calling of Invitation Bids on contracts wherein time was of the absolute essence and the money value was of a relatively small nature of less than \$10,000. This procedure was further carried out in 1960-61 by having some 28 contracts called under this policy, particularly where time for the completion of the work was most restricted.

Further impetus was given to the method of calling contracts under what is known as an Equipment Rental Contract, wherein the Department calls for tenders for certain types of equipment for a certain period of time to carry out projects, basically on the Resources and Mining Access Roads. This policy has been adopted on 11 contracts to date, and the use of this procedure is advantageous where time is not available for exhaustive field survey and office designs to be made.

SUMMARY OF CONTRACT WORK AWARDED FOR 1960-61

Type of Work		Total
	MAINTENANCE	
Prime Dust Layer		8
Crushed Gravel (including 13 capital contracts).....		72
Hot Mix Patching		9
Resurfacing.....		3
Surface Treatment		5
Winter Sanding		22
Screened Sand.....		15

TOTAL		134
	CONSTRUCTION	
Concrete Paving		5
Grading and Culverts		42
Hot Mix Paving.....		87
Structures.....		39
Structural Steel.....		28
Resurfacing.....		1
Miscellaneous		12

TOTAL		214
GRAND TOTAL — MAINTENANCE, CONSTRUCTION....		348

MATERIALS AND RESEARCH DIVISION

A. RUTKA, P.Eng., *Materials and Research Engineer*

The Materials and Research Division, through its testing facilities and technical specialists, is responsible for the evaluation of highway materials, and for the provision of quality control guidance to the Department.

The division also carries on a continuous study of the use of materials and construction procedures, to develop more efficient and economical methods, and to ensure that all technological advances are employed in the Departments' operations.

Memberships in the several technical associations devoted to materials testing and highway construction, were continued. During the past year, ten technical papers were prepared and presented at meetings of the various technical associations.

Personnel assisted in lectures on the theory and application of materials, at thirteen training courses sponsored by the Training Committee on various phases of highway construction, and on familiarization courses for engineers-in-training.

The work of this division is carried on by six engineering sections. The organization is operated centrally with five regional offices, which generally coincide with the regionalization of other sections and branches within the Department. Only field investigations and quality control work, including regional testing laboratories, have been decentralized. The remainder of the work is handled from the central organization.

Physical Laboratory Section

A laboratory was established late in the year in the northern region, which now completes laboratory decentralization. On-the-site materials control was continued through the use of mobile laboratories at Ayr, Campbellville, Port Hope and Huntsville. Temporary laboratories were established at Ottawa and Brockville, to provide testing facilities for the Ottawa Queensway and Highway 401 construction. Although the regional and mobile laboratories testing has measurably served to more rapidly service construction projects within the regions, very little relief has been evident with the central laboratory. This is largely due to the fact that the number of tests performed in total is 60 per cent greater than the previous year. It is anticipated that regional operations will increase further so as to permit a greater amount of time free for more development work by the central laboratory. Inspection and testing of many of the miscellaneous products used by the Department was continued as a service to the supply section. Three specifications were also prepared for asphalt emulsions and road materials.

Chemical Section

This section is responsible for testing and evaluating all materials not covered in the physical testing laboratory. This section also initiates and reviews specifications related to materials connected with this laboratory, and nine specifications were prepared during the past year.

The Chemical section assisted in the preparation of procedures for the method of sign production. When adopted, standard methods and materials will be used by all Department sign shops. The pre-purchase evaluation of materials continued. Nine such pre-purchase evaluations were made, and it has been possible to select material showing the best performance characteristics. Through such an evaluation it has been demonstrated that the quality of traffic paints has improved, and that one application will generally be sufficient each year.

The infra-red spectroscopy equipment had been purchased towards the end of the year. This equipment will aid considerably in analyzing and identifying various ingredients, thus providing very quick and accurate results for quality control purposes.

Materials Section

This section is responsible for the location and field evaluation of aggregates, for the control of all materials connected with asphalt and concrete structures, and for providing quality control service during construction. Additional engineering and inspection staff was obtained from construction to assist in the quality control work. Many problems had been encountered with the bituminous pavements, and a much closer attention was given to the design and construction procedures than in previous years. Some studies with the use of heavy pneumatic-tired rollers continued, as did the study on the moisture problem in the bituminous mixes.

The Department has continued successfully the construction of improved design reinforced concrete pavement, which was introduced two years ago. One modification to the design was made: the spacing of joints has been reduced from 99 feet to 70 feet, and expansion joints have been eliminated, except in early spring or late fall construction.

The trial area specification requirements for paving concrete pavements to permit the evaluation of contractor's equipment technique, prior to commencement of the main construction, has proven very successful. Considerable interest in this procedure has been noted throughout the country, and it is expected that other agencies may adopt this specification.

There has been continuing development in quality control procedures, such as the survey and approval of ready-mix concrete plants. Mixes have been designed in the laboratory for almost every contract involving structural concrete. A most noticeable general development has been the increased use of prestressed concrete, particularly for the construction of concrete beams, which are transported from the factory to the site for erection.

A second development has been the introduction in the field following laboratory tests, of concrete admixtures, which retard the initial set of concrete. These have allowed such improvements in construction techniques as the concreting of a bridge deck in one continuous operation. On most structures, concrete work has continued throughout the winter.

Extensive use has been made of insulated form work to protect new concrete from freezing. The techniques and materials involved have now become fully accepted construction methods. Quality control was exercised on 100 bituminous paving contracts, and on 59 miles of concrete paving involving 834,000 square yards of concrete.

Soils Section

The activities of this section encompass the full scope of all soils engineering problems connected with design, construction and maintenance of highways. Field crews make borings as required, to determine the type of soil encountered, and obtain samples for laboratory testing purposes. Performance surveys are carried out during the winter and spring, and at other times of the year as required, to determine the condition of the road. Where applicable, geophysical methods were employed to obtain useful subsurface information. Seismic surveys were used more extensively than in the past.

During the past year, a total of 3,124 miles of road were reviewed for frost heaves, 489 miles for detailed borings which were made for the preparation of detailed designs.

This section also provides technical assistance to the district staff in soils problems on construction. Nuclear moisture and density units were obtained and used, and it was found that these units give reliable test data on-the-spot, so that very little time is lost in providing the necessary data for construction control purposes.

The pavement evaluation programme, sponsored by the Canadian Good Roads Association, was continued, and many investigations were made to determine the supporting value of the road surfaces. It is expected that, when this programme is completed, the information will be sufficient to provide a more realistic basis for pavement design.

Many requests were received from municipalities for assistance in the preparation of their designs of streets and pavements. In areas where road gravels are scarce, some municipalities are becoming interested in the use of soil cement construction. A few projects have already been initiated and constructed under the technical guidance of the Materials and Research Division. This type of construction is quite economical in some areas, and it is expected that its use will grow.

Road roughness surveys with the roughometer continued on all new construction, and this equipment is now being used as a guide to the quality of the finished road surface.

Foundation Section

Due to the high land values, particularly in urban areas, the alignment is usually selected to cause as little damage as possible to the adjoining property. This usually requires that the alignment cross soft ground foundations, which are unsuitable for building purposes. Many complicated foundation soils were encountered during the year, which required detailed core drill investigations to procure adequate undisturbed samples for laboratory testing purposes. Several sites were instrumented and the rate of consolidation had to be controlled in order to prevent stability failures. On other sites where settlement was a problem, the instrumentation programme gave a guide to the amount of settlement that took place.

As the work load is beyond the capacity of the present staff, a large share of the work was let to consultants. The consultants undertook 75 complete founda-

tion investigations, the Department 84. A total of 15,424 feet of earth overburden was drilled by the Department in its foundation investigation programme, and 2,015 feet of bedrock.

Office Engineer's Section

This office assembles, evaluates, records and distributes the information from field and laboratory results. The decisions as to the acceptability of materials from various sources for various construction purposes are also made.

This section maintains a complete granular inventory file system, in which is kept all the up-to-date information on granular deposits relative to quality and quantity. The granular inventory system now has about 12,000 entries. It also maintains an approved commercial list sources, where suppliers' materials are checked at regular intervals to ensure that the quality of the material is maintained at all times.

The Department supplies to prospective bidders for each project, strip maps showing granular deposits and their suitability for specific purposes. This section also prepares these strip maps.

New products, designs and equipment methods are being produced annually, each of which must be proven satisfactory to good engineering practices and public safety. During the past year, co-operative programmes by laboratory and field staff, have been conducted on the following:

Bituminous

(a) *Compaction*. With a view to improved bituminous compaction equipment and techniques, intensive field testing was carried out to assess the merits of 30-ton pneumatic-tired and vibratory rollers. Tests were satisfactorily completed, on the pneumatic type rollers, which have shown that they will gradually be introduced into bituminous pavement construction. Further testing is necessary before vibratory rollers can be introduced into hot-mix paving.

(b) *Cements*. To compare relative performance under similar conditions, three contracts were completed using asphalt cements from three crude sources. These projects are under further study.

(c) *Asbestos Fibres*. An experimental section of hot-mix pavement was laid at Matheson in co-operation with a supplier, in which short asbestos fibres were introduced into the mix.

(d) *Cold-Mix Additives*. Studies are continuing to determine procedures and additives necessary to give the best possible durable mix. It is hoped that evaluation of results obtained to date will permit a satisfactory solution to the problem.

Concrete

(a) *Durability of Coarse Aggregate*. Good concrete must resist the effects of freezing, thawing and scaling caused by de-icing salts. For thirty years it has been known that if concrete contains millions of microscopical air bubbles of the right size and distance apart, it will resist destructive effects of freezing and de-icing chemicals such as salt or calcium chloride. Considerable work has already been done to determine the type of concrete that should be prepared to resist the weather conditions in Ontario.

The laboratory is using a freeze-thaw machine which subjects 60 concrete specimens to a cycle of freezing and thawing every three hours; thus, in 6 weeks, simulating ten years' natural exposure. In addition, concrete blocks are flooded with a 3 per cent salt solution then frozen and thawed out each day. By applying these procedures to different kinds of concrete, e.g. concretes varying in proportions, different air entraining agents, aggregates, etc., preselection can be made of those combinations most likely to give the best performance in the field.

As an additional safeguard to assist in the protection of new concrete, various surface sealers such as a 50:50 mixture of boiled linseed oil and kerosene, silicones, epoxy resins, etc., have been given field trials.

(b) *Grout for Prestressed Concrete*. Many older structures indicate deterioration due to age and weather, but their life can be greatly extended if suitable materials and techniques are used to restore the concrete. Epoxy resin, a new material, has recently become available, and can be used as an adhesive to bond new concrete to old, as a crack filler, or as a surface sealer. Intensive exploration of the potential uses of this type of material has been effected, and good results achieved.

Experimental epoxy resin grouting of cable ducts in a prestressed concrete beam was the first such reported application in the world. Together with the more conventional grouts under development, an interim report was presented at the International FIP-RILEM Symposium on Injection Grout for Prestressed Concrete, in Trondheim, Norway. Work is being continued particularly to determine the effect of different cements on the properties of grout.

(c) *Rapid Curing of Concrete Test Cylinders*. Good progress was made on the laboratory phase of this project, the object of which is to develop a simple technique for forecasting 28-day strength within a day of placing the concrete. A method has been devised, and will be tried on some contracts in 1961, in order to prove its accuracy.

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1960-61

T. C. MUIR, P.Eng., Contract Control Engineer

Acceleration was apparent in the construction of the Trans-Canada Highway across the Province this year, particularly in respect to paving operations, as evidenced by the crash program with the completion of approximately 114 miles of paving in the "Gap" area, Agawa River to Marathon.

Important works carried out during the year are as follows:

The construction of the Ottawa Queensway is being carried out on schedule as per an agreement of March 19, 1957, between Canada, Ontario, National Capital Commission, and the City of Ottawa, as participants.

On Stage 1 of the Ottawa Queensway (east city limits to Hurdman's Bridge), the concrete pavement was completed from the Rideau River easterly to the connection onto Highway 17 for a distance of 5.72 miles of four-lane divided highway. This section, together with the interchanges at St. Laurent Boulevard and the Montreal Road, were open to traffic.

On Stage 2 of the Ottawa Queensway (Highway 15 to the Carling Avenue Interchange), four grading and structure contracts in this Stage 2 were completed this year, with new structures being open to traffic at Highway 15, Pinecrest Road, Woodruffe Avenue and Maitland Avenue. A further granular base and paving contract has been awarded to complete the paving of the full length of this Stage 2.

On Stage 3 of the Ottawa Queensway (Carling Avenue to Bell Avenue), grading and drainage works are now in the early stages, and six structures in this area are in various stages of completion.

On Highway 7, grading was commenced from Sharbot Creek westerly for 9.9 miles.

In the Peterborough area, grading and paving was completed on an eight-mile section of Highway 7 from Fowler's Corners southerly. In the same area, grading work was completed on the Peterborough By-pass, together with two railway overpasses and structure over the Otonabee River. Paving is nearing completion on this important By-pass.

On Highway 12, grading was completed on the Gamebridge By-pass and contracts will be awarded this coming year to complete paving and structure.

On Highway 69, large scale grading work is in progress for 19.55 miles under three grading contracts from 10 miles south of Parry Sound to 2 miles north of Nobel, with this section including a 260-foot structure over the Seguin River on the Parry Sound By-pass and structures at the Boyne River and the C.N. Railway. Further north on Highway 69 the grading has been completed between Pointe-au-Baril and Magnetawan Bay, with the granular base and paving contract over this section being well under way this year. Paving has been completed from the Magnetawan River northerly to the French River.

In the Sudbury area on Highway 17 a section between the Vermilion River and Whitefish was completed, with reconstruction being started on Highway 17 east and west of Blind River.

North from Sault Ste. Marie on Highway 17 to Havilland Bay, grading and granular base was completed for 23.88 miles, with base course pavement being laid over 19 miles of this section. In this section two structures and two culverts over the Root River, and major structures over the Goulais River and the Algoma Central Railway Subway, were completed.

The "Gap" section between Agawa River and Marathon was officially open on September 17, 1960, culminating a very heavy program of paving for approximately 91 miles of full course pavement and another 23 miles of single course pavement. Also in this "Gap" area, five bridges were completed, among which were two large steel truss bridges over the Agawa River and White Lake Narrows.

Grading and paving east and west of Highway 17 was completed this year, as was the grading from Schreiber westerly which will be paved this coming season. Base course paving was also laid from Selim Diversion to Cavers. Over very rugged terrain from Cavers to 10 miles east of Nipigon, grading operations are well under way, with paving contracts to be called next year. Base course paving was laid this year from 10 miles east of Nipigon to Nipigon. West of Nipigon, paving was completed from 10 miles south of Red Rock Corners to Ouimet. Adjoining this section, from Ouimet to Amethyst, the grading was completed and base course paving was finished from the Coldwater Creek to Amethyst.

West of Fort William on Highway 17, grading and base course paving were completed from 7.5 miles north of Highway 11 to Poland.

Proceeding further west, paving was completed from Ignace to Butler and from Butler to 2.5 miles west of Raleigh.

In the Kenora District, grading was completed from 5 miles west of Highway 105 westerly for 11.1 miles and paving operations were started. Adjoining the above to the west, right through to Longbow Corners, grading operations are in progress.

Near the western terminus of the Ontario section of the Trans-Canada Highway, grading is completed from 12.2 miles east of the Manitoba boundary easterly for 6.2 miles.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and Culverts.....	1,006.43 miles
Bituminous Hot Mix Pavement.....	828.48 miles
Permanent Bridges and Structures built.....	128

Grading and Culverts

District	T.C.H. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	17	East city limits to 0.6 mi. east of Green's Creek.....	4.40	.01	4.39
	15 & 17	Interchange.....	.80	.01	.79
	Q'way	Hare Ave. east.....	1.30	1.20	.10
	Q'way	Rideau River to east city limits.....	1.30	.78	.52
	Q'way	Carling Ave. Interchange to Clarendon Ave.....	0.40	.....	.10
	Q'way	Clarendon Ave. to Loretta Ave.....	1.08	.....	.30
Kingston	7	Sharbot Creek westerly.....	9.90	.....	2.50
Port Hope	7	C.P.R. O'head, Peterborough By-pass.....	.81	.74	.07
	133	Jackson's Creek to Hwy. 7.....	3.50	3.30	.20
	7 & 115	Peterborough By-pass.....	6.20	2.53	3.67
	12	Revision at Gamebridge.....	1.33	1.10	.23
Huntsville	12	Coldwater By-pass.....	1.60	1.40	.20
	69	Parry Sound By-pass.....	3.46	.....	1.73
	69	North end of Parry Sound By-pass to 2 mi. north of Nobel.....	5.88	.....	4.70
	69	Hayes Corners to Parry Sound By-pass.....	10.20	.....	5.00
Sudbury	17	Vermilion River to Whitefish.....	1.96	.50	1.46
	69	Magnetawan River to Pointe Au Baril.....	12.32	4.00	8.32
Sault Ste. Marie	17	Sault Ste. Marie to Odena.....	3.88	2.40	1.48
	17	Odena to Heyden.....	5.37	2.50	2.87
	17	Heyden to Goulais River.....	6.77	6.40	.37
	17	Goulais River to Havilland Bay.....	7.86	7.50	.36
	17	Blind River east and west.....	10.00	.....	3.40
	17	Montreal River bridge.....	.84	.....	.84
White River	17	6 mi. south of Michipicoten River southerly.....	7.00	5.50	1.50
	17	2 mi. south of Old Woman River southerly.....	10.30	9.00	1.30
Fort William	17	1.75 mi. west of Cavers to Pays Platt.....	8.00	7.40	.60
	17	Jackfish Lake to Terrace Bay.....	17.64	16.00	1.64
	17	Raith to Poland.....	9.35	3.30	6.05
	17	Amethyst Road to Loon Lake Road.....	8.65	6.20	2.45
	17	Pearl River to Loon Lake Road.....	5.20	3.70	1.50
	17	Ouimet to Pearl River.....	6.50	1.50	5.00
	17	Nipigon River bridge easterly.....	10.40	7.00	3.40
	17	10 mi. east of Nipigon easterly.....	9.73	1.40	5.60
	17	20 mi. east of Nipigon easterly.....	10.40	.....	1.00
	17	Schreiber to White Sand Lake.....	5.50	.....	4.50
Kenora	17	12.2 mi. east of Manitoba boundary easterly.....	6.20	5.00	1.20
	17	5 mi. west of Hwy. 105 westerly.....	11.10	7.00	4.10
	17	Ignace to 1.5 mi. east of Borup's Cnrs.....	7.42	1.00	6.42
	17	Longbow Corners easterly.....	9.00	.....	7.50
	17	10 mi. east of Longbow Corners easterly.....	9.57	.....	7.00
	17	19 mi. east of Longbow Corners easterly.....	11.08	.....	.33
TOTALS.....			264.20	108.37	104.69

Bituminous Hot Mix

District	T.C.H. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	Q'way	Carling Ave. Interchange Legs.....	.76	.....	.76
	Q'way	Rideau River to east city limits.....	1.30	.16	1.14
	15 & 17	Interchange Hwys. 15 & 17.....	.80	.....	.80
	15	Carleton Place By-pass.....	2.74	.....	2.74
Kingston	7	Interchange Hwys. 7 & 38.....	.08	.....	.08
Port Hope	133	Jackson's Creek to Hwy. 7.....	3.50	.....	3.50
Huntsville	12	Coldwater By-pass.....	1.90	.....	1.90
	69	Nobel to Pointe-Au-Baril.....	18.34	.....	18.34
Sudbury	17	Vermilion River to Whitefish.....	1.96	.....	1.96
	69	Magnetawan River to French River.....	18.29	.....	18.29
Sault Ste. Marie	17	Montreal River bridge.....	.84	.....	.84
White River	17	White Lake Narrows easterly.....	9.35	.....	9.35
	17	C.P.R. Overhead east of White River easterly	20.10	.....	20.10
	17	28 mi. east of White River to Bedpan Lake....	9.60	.....	9.60
	17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	18.84	.....	18.84
	17	15 mi. north of the Agawa River Northerly	14.50	.....	14.50
	17	3 mi. south of Agawa River bridge Northerly	18.84	.....	18.84
Fort William	17	10 mi. south of Red Rock Corner to Ouimet..	10.83	.....	10.83
	17	Jackfish Lake to Terrace Bay.....	17.64	.43	17.21
Kenora	17	5 mi. west of Hwy. 105 westerly.....	11.34	.....	5.67
	17	Butler to Ignace.....	7.50	.....	7.50
	17	2.5 mi. west of Raleigh to 1.5 mi. east of Butler.....	9.93	.....	9.93
	17	Winnipeg River bridge (East Branch).....	.50	.....	.50
TOTALS.....			199.48	.59	193.22

Granular Base (New Grading)

District	T.C.H. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	17	Ottawa east city limits to 0.6 mi. east of Green's Creek.....	4.40	.15	4.25
	Q'way	Hare Ave. to west city limits.....	2.20	1.20	1.00
	Q'way	Hare Ave. northeast.....	1.30	.72	.58
	Q'way	Rideau River to east city limits.....	1.30	.87	.43
	Q'way	Junction of Hwys. 15 & 17 to Carling Ave. Interchange.....	4.20	.....	2.10
Port Hope	7	C.N.R. Overhead, Peterborough By-pass.....	.17	.....	.17
	133	Jackson's Creek to Hwy. 7.....	3.50	1.92	1.58
	7 & 15	Peterborough By-pass.....	6.20	.....	6.20
	12	Revision at Gamebridge.....	1.33	.....	1.33
Huntsville	12	Coldwater By-pass.....	1.90	.....	1.90
	69	Nobel to Pointe-Au-Baril.....	18.34	11.00	7.34
	69	North end of Parry Sound By-pass to 2 mi. north of Nobel.....	5.88	.....	4.70
	69	Hayes Corners to Parry Sound By-pass.....	10.20	.....	5.00
Sudbury	17	Vermilion River to Whitefish.....	1.96	.50	1.46
	69	Magnetawan River to Pointe-Au-Baril.....	12.32	4.00	8.32
	69	Magnetawan River to French River.....	18.29	.....	18.29

Granular Base (New Grading) (Cont'd)

District	T.C.H. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Sault Ste. Marie	17	Sault Ste. Marie to Odena.....	3.88	2.40	1.48
	17	Odena to Heyden.....	5.37	2.50	2.37
	17	Heyden to Goulais River.....	6.77	6.40	.37
	17	Goulais River to Havilland Bay.....	7.86	7.50	.36
	17	Blind River east and west.....	10.00		3.40
White River	17	28.4 mi. east of White River easterly.....	9.60		9.60
	17	10 mi. north of Wawa northerly.....	9.62		9.62
	17	6 mi. south of Michipicoten River southerly.....	7.00	4.50	2.50
	17	2 mi. south of Old Woman Bay southerly....	10.30	.50	9.80
Fort William	17	1.75 mi. west of Cavers to Pays Platt.....	8.00	5.00	3.00
	17	Amethyst Road to Loon Lake Road.....	8.65	7.50	1.15
	17	Jackfish Lake to Terrace Bay.....	17.64	16.00	1.64
	17	C.P.R. Overhead, Ouimet.....	.06	.04	.02
	17	East end of Nipigon Bridge easterly.....	10.40	6.00	4.40
	17	Loon Lake Road to Pearl River.....	5.20	2.60	2.60
	17	Pearl River to Ouimet.....	6.50	2.30	4.20
	17	Raith to Poland.....	9.35	2.10	7.25
	17	7.50 mi. north of Shabaqua to Poland.....	19.45		19.45
	17	Coldwater Creek bridge Approaches.....	.07		
	17	10 mi. south of Red Rock Corners to Ouimet.....	10.83		10.83
	17	Schreiber to White Sand Lake.....	5.50		5.50
	17	20 mi. east of Nipigon easterly.....	10.40		1.00
	17	10 mi. east of Nipigon easterly.....	9.73		7.00
Kenora	17	12.2 mi. east of Manitoba b'dy easterly.....	6.20	4.20	2.00
	17	Ignace to 1.5 mi. east of Butler.....	7.42	.50	6.92
	17	5 mi. west of Hwy. 105 westerly.....	11.10		11.10
	17	Longbow Corners easterly.....	9.00		6.60
	17	10 mi. east of Longbow Corners easterly.....	9.57		6.20
TOTALS.....			328.96	90.40	205.58

New Bridges

District	T.C.H. Hwy.	Location
Ottawa	17	Richmond Road Hwys. 15 & 17 Interchange
	Q'way	Maitland Ave.
	Q'way	Woodruffe Ave.
Port Hope	12	Talbot River, Gamebridge By-pass
Huntsville	12	Coldwater River, Coldwater By-pass
Sault Ste. Marie	17	Root River, 3.5 mi. north of Sault Ste. Marie
	17	Root River, 4.9 mi. North of Sault Ste. Marie
	17	Goulais River, 16 mi. north of Sault Ste. Marie
	17	A.C. and H.B. Rlwys., at Odena
White River	17	White Lake Narrows, 20 mi. west of White River
	17	White River, east, 12 ji. east of White River
	17	Old Woman River, 14 mi. south of Wawa
	17	Sand River, 110 mi. north of Sault Ste. Marie
	17	Agawa River, 11 mi. North of Montreal River
Fort William	17	Coldwater Creek, 20 mi. southwest of Nipigon
	17	C.P.R. Overhead at Ouimet
	17	Jackfish River, 8.7 mi. east of Nipigon River bridge
	17	Jackpine River, 16 mi. east of Nipigon River bridge
	17	Pays Platt Creek, 5 mi. northwest of Rossport
	17	Pays Platt River, 5 mi. northwest of Rossport

Total of 20 New Bridges

MINING, ACCESS AND RESOURCES ROADS REPORT, 1960-61

T. C. MUIR, P.Eng., Secretary

Mining and Access Roads Committee (Interdepartmental)

The Resources Roads Program, commenced in 1958 and carried out during 1959, was accelerated in the fiscal year 1959-60. The Resources Roads Program is carried out under an agreement between the Federal Government and the Province of Ontario as signed on December 22, 1959, proposing an expenditure in northern and northwestern Ontario of \$15,000,000 by March 31, 1967. The Department of Highways will design and supervise construction of the work with the shareability of costs between the Federal Government and the Province of Ontario being equal, except where private enterprise directly benefits and herein the costs will be shared between the two governments and the company concerned.

The following was accomplished this year:

New Liskeard District:

Resources Road — Foleyet West — 30 miles

Clearing of this 30-mile section was completed on March 16, 1961, to Mile 30, thus linking up the clearing with the cleared 30-mile portion east of Chapleau.

On May 14, 1960, the Ivanhoe Lake dam collapsed, flooding the town of Foleyet and washing out the old bridge downstream against the new structure over the Ivanhoe River which was almost completed on May 12. By putting an emergency crew to work, within a few days all remedial work was completed and Foleyet was once again a road link to Timmins.

On August 31, work commenced under an Equipment Rental Contract from Mile 10 to Mile 17 west of Foleyet, and with progress much better than had been anticipated work actually was completed to Mile 20, together with a tote road to Mile 24½ west of Foleyet and a winter road to Mile 28¾ west of Foleyet.

Mining Assistance Road

Under mining road assistance from the Department of Mines, 5 miles of existing road were widened and improved from the Kam-Kotia Mine southerly, a project which was shared equally by the Province and the mining company concerned.

Sault Ste. Marie District:

Resources Road — Chapleau East — 30 miles

The grading, culverts and granular base project, commenced the previous year from Chapleau easterly, was completed to 12 miles east of Chapleau. Clearing operations were carried out during the winter to connect ultimately with the section of the highway clearing being carried out in another district from Foleyet westerly.

Fort William District:

Resources Road — Spruce River Road — Highway 17 (East of Port Arthur) to Cheeseman Lake — approximately 75 miles.

Construction costs being shared by Abitibi Power & Paper Co.

SECTION No. 1 — Highway 17 to 30 miles north.

This section, commenced the previous year, was completed in October, 1960, and this work was carried out by a contract let by the Abitibi Power & Paper Co. Ltd., who share in the costs of the construction under the Resources Roads Program. This work was carried out under very difficult rock conditions and aggravated further by the unavailability of borrow material.

SECTION No. 2 — 30 miles north of Highway 17 to 56 miles north of Highway 17.

An Equipment Rental Contract, No. 59-286, was let by the Ontario Department of Highways for construction of this section, with clearing and grubbing operations starting in November 1959 and carried out during that winter. Actual road construction started in May 1960, with construction operations closing down in November 1960, except for the clearing operations which were carried on to completion in February 1961. As in the previous section from Highway 17 to 30 miles north, difficult terrain was encountered, necessitating the use of a self-propelled wagon drill for boring operations.

Resources Road — Savant Lake (599) south to Highway 17 — approximately 90 miles.

SECTION No. 1 — Savant Lake south to Sturgeon River (Mile 15).

An Equipment Rental Contract, No. 59-259, was let by the Ontario Department of Highways for the construction of the first section from Savant Lake southerly to Mile 15, with road construction starting on September 21, 1959, and terminating temporarily on December 15, 1959. Work recommenced February 15, 1960, and finally stopped on December 15, 1960, with approximately 3 miles left to complete to reach the Sturgeon River. Scarcity of suitable borrow material necessitated the contractor to scrape overburden from rock ridges to provide enough material to build a grade and was the chief obstacle toward the completion of this project. Work will start again on May 15, 1961, and completion expected July of the same year.

SECTION No. 2 — 20 miles south of Savant Lake to approximately 28 miles south of Savant Lake.

An Equipment Rental Contract, No. 60-283, was let by the Ontario Department of Highways to construct this 7-mile section, with access to this section being gained by using 75 miles of privately owned bush road joining Highway 17 at Ignace. Clearing operations started on February 6, 1961. On completion of this section a gap of 6 miles remains to be called under a project in July of 1961 to give a road connection from Highway 17 to Savant Lake and to Pickle Crow Mine, 120 miles to the north.

Resources Road — Nakina to Cavell and Terrier Lake — approximately 47 miles.

Anaconda Iron Ore (Ontario) Limited is contributing towards construction costs on the section Cavell to Terrier Lake, 34 miles.

The road grading on this 47-mile section was completed under the Project 9-90447. The project is complete except for the placing of crushed gravel from Nakina to Cavell for some 13 miles, together with partial cleaning up of debris and widening of right-of-way.

Mining Access Road

Under Contract 60-230 an Equipment Rental Contract was called to construct approximately 2 miles of road to provide more direct access from Atikokan to the Steep Rock Airport, and this project was financed entirely by the Province.

Kenora District:*Resources Road — Minaki South — 21.5 miles.*

Work was commenced on this project under Contract 59-164. The original contract considered connecting a Statute of Labour Road running from Secondary Highway 596 to Trout Lake with the Hydro Electric Power Commission Road from Minaki to Caribou Falls. However, after construction started it became evident that the existing road sections would not be suitable to carry the type of traffic expected to use this road, therefore the actual contract length was increased from 15 miles to 21.5 miles. This project, insofar as grading is concerned, was completed this year and a contract has been called and awarded in May of 1961 for the placing of 50,000 tons of Granular Base "A" throughout the contract length to finally complete this project.

Resources Roads, 1960-61
Financed Partially by the Province

District	Location	Year Begun	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1960-61	Miles to Compl.
New Liskeard	Foleyet west.....	1958	30.0	10.0	10.0	10.0
Sault Ste. Marie	Chapleau east..... (Foleyet-Chapleau — 60 miles)	1958	30.0	8.5	3.5	18.0
Fort William	Nakina to Terrier Lake.....	1959	47.0	45.0	2.0	.....
	Savant Lake to Hwy. 17....	1959	90.0	4.0	11.0	75.0
	Hwy. 17 to Cheeseman Lake.....	1959	75.0	20.0	24.0	31.0
Kenora	Minaki south.....	1959	21.5	4.0	17.5	.....
TOTALS.....			293.5	91.5	68.0	134.0

Mining and Access Roads, 1960-61
Financed Partially by the Province

New Liskeard	Kamiscotia Lake southerly.....	1960	5.0	5.0
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Mining and Access Roads, 1960-61
Financed Entirely by the Province

Fort William	Caland Ore Road to Airport Road.....	1960	2.0	2.0
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DISTRICT No. 1—CHATHAM**G. U. HOWELL, P.Eng., District Engineer****Construction**

Construction of Highway 401 through Kent County continued this year with the completion of the grading of Tilbury By-pass section connecting Highway 2 west of Tilbury with Highway 2 east of Tilbury, a distance of 4.53 miles. Grading and structure operations were also commenced from the east end of Tilbury By-pass easterly for a distance of 7.24 miles. New grading operations were commenced for the construction of a new portion of Highway 39 from the town of Tecumseh, easterly to the Puce River, a distance of 7 miles. This diversion, which is to be a semi-controlled access highway with concrete pavement, eliminates two level crossings over the C.N.R. Railway at Tecumseh and Puce.

Highway 3B (Dougall Avenue) from the junction of 401 into Windsor was widened with concrete pavement to a width of 48 feet for a distance of 1.93 miles, and asphalt surfaced.

Reconstruction of Highway 40 was completed from Chatham northerly for 11.73 miles; building the last of seven bridges was included. Reconstruction and resurfacing of Highway 2 from the Kent-Middlesex boundary to Thamesville was completed. Highway 7 from Arkona to Thedford and easterly, a distance of



Highway 401—Grading on Tilbury By-pass (Chatham District).

7.52 miles, was reconstructed and paved, three different types of asphalt were used as an experimental operation.

Reconstruction of Development Road 471 from Courtright to Alvinston continued; paving was laid from Courtright easterly a distance of $6\frac{1}{2}$ miles; grading was undertaken from Alvinston westerly to the Inwood County Road, also east and west of Brigden.

Maintenance

General maintenance operations were carried out in the district during 1960-61. Two hot mix patching contracts proved very satisfactory.

The departmental "Tree Saver" was used to relocate 33 trees. Hay was cut and baled on the right-of-way on Highway 401 and Highway 21, and used for mulching purposes, in conjunction with seeding operations. Some 349 dead trees were removed, 75 miles of weed spraying were completed, and 184 acres were seeded; seven new fireplaces were built on Highway 402 and Highway 40. Experimental test plots were laid out in co-operation with Head Office to observe the effects of various combinations of soil sterilants for the control of unwanted vegetative growth in the gravel strip on either side of the median on Highway 401.

Approximately 4,500 signs were erected or changed on construction and maintenance. A general change-over on speed zoning was carried out as well as freeway signing.

On Highway 40, west of Wallaceburg, "catseye roadstuds" were installed on a sharp curve. These proved a great help in directing night traffic.

New traffic signals were installed near Windsor at the junction of Highway 3B (Howard Avenue) and Eugenie Street; also at the junction of Highway 39 (Tecumseh Road) and Lauzon Road. Three other signals were revised. Flashers were erected at the junction of Highways 402 and Highway 7; Highway 402 and Highway 40; and Highway 40, west of Wallaceburg. Permanent street lighting was installed at the Blue Water Bridge, Sarnia.

Two new salt sheds and one survey office were built and wired by department forces, also moving and building Quonset hut.

The winter was fairly open, but colder than usual for this area. We experienced two bad storms in the Sarnia area in January. A new aluminum one-way plough was tried out on an experimental basis on two patrols. It was used for 90 hours and in this period wore out $1\frac{1}{2}$ blades and 1 set of shoes. There was cracking on the metal of the mould board and the push frame, but it was lighter on the front end of the truck making the steering and handling much easier.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Lot No.	Con. No.	Type
2	C.P.R.	Essex County, Sandwich Twp.....	27	2	2 cantilevers 1 bell
39	C.N.R.	Essex County.....	1	West of Puce Riv.	2 flash. lights, gates
21	C.N.R.	Kent County.....	15	B	2 flash. lights
18	Michigan Central	Essex County, Sandwich West Twp.....	38	....	4 flash. lights, 2 bells
21	C.N.R.	Lambton County, Plympton Twp.....	....	9	2 flash. lights

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
2	Kent-Middlesex boundary to Thamesville.....	7.3	1960	7.3	21,174
3B	Hwy. 401 to Cameron Boulevard.....	1.93	1960	1.93	11,802
7	1.75 mi. east of jcts. 7 and 82 to Arkona and Thedford.....	7.52	1960	6.58	18,105
40	Chatham to 11.93 mi. north.....	11.93	1959	11.93	45,620
TOTALS.....		28.68		27.74	96,701

Bituminous Cold Mix

Hwy. No.	Location	Tons Placed 1960-61
2, 401	Tilbury By-pass.....	56
2	Thamesville to Kent bridge.....	4
2	Kent bridge to Louisville.....	4
	Various patrols	770
TOTAL		834

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
701	Pelee Island.....	6	15,120	900

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Miles Placed 1960-61
3	Kent-Elgin county line to Howart-Orford town line.....	3.00	3,000
7	1 mi. east Jct. 7 and 21 to Jct. Hwys. 7 and 79.....	3.50	3,499
TOTALS.....		6.50	6,499

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
701	Pelee Island.....	6	15,750	900*

* Beach coarse sand was used in place of chips.

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
40	Big Creek No 5, Dover and Chatham Twps.....	1959	May 1960	Rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61	Pave. Width
3B	Hwy. 401 to Cameron Blvd.....	1.93	1960	1.93	34,055	48 feet

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
2	Kent-Middlesex boundary to Thamesville.....	7.30	17,196
3B	Hwy. 401 to Cameron Boulevard.....	.....	1,638
7	1.75 mi. east Jct. 7 and 82 to Arkona and Thedford.....	7.52	16,417
39	Tecumseh to Puce (Diversion).....	7.02	31,134
40	Chatham to 11.93 mi. north.....	11.93	24,216
471	From Courtright easterly 7.0 mi.....	7.0	5,010
TOTALS.....		40.77	95,611

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
3	Kent-Elgin county line to Howard-Orford town line.....	3.00	2,000
7	1 mi. east Jct. 7 and 21 to Jct. Hwys. 7 and 79.....	3.50	1,500
40	Wallaceburg to 3 mi. north of Sombra.....	14.00	8,000
401	Tilbury to Jct. Hwy. 401 and Walker Road.....	33.00	9,900
TOTALS.....		53.50	21,400

Grading and Installing Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
2	Kent-Middlesex boundary to Thamesville.....	7.30	1959	5.00	2.30
2	Thamesville to Kent bridge.....	5.79	1960	.....	1.00
2	Kent bridge to Louisville.....	4.03	1960	.....	0.50
3B	Hwy. 401 to Cameron Boulevard.....	1.93	1960	.....	1.93
7	1.75 mi. east Jct. 7 and 82 to Arkona and Thedford.....	7.52	1960	1.00	6.52
39	Tecumseh to Puce (Diversion).....	7.02	1960	.....	1.00
40	Chatham to 11.93 mi. north.....	11.93	1959	5.00	6.93
401	Hwy. 2 east Tilbury to Hwy. 2 west Tilbury.....	4.53	1960	.....	4.53
401	Hwy. 2 east Tilbury, easterly.....	7.24	1960	.....	3.50
471	Hwy. 79 to Inwood County Road.....	5.75	1960	.....	5.75
471	Brigden, east and west.....	5.00	1960	.....	5.00
TOTALS.....		68.04		11.00	38.96

Granular Base Laid on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
2	Kent-Middlesex boundary to Thamesville.....	7.30	1959	5.00	2.30	16,299
2	Thamesville to Kent bridge.....	5.79	1960	.....	.....	5,526
2	Kent bridge to Louisville.....	4.03	1960	.....	.....	1,929
3B	Hwy. 401 to Cameron Blvd.....	1.93	1960	.....	1.93	65,177
7	1.75 mi. east Jct. 7 and 82 to Arkona and Thedford.....	7.52	1960	.....	7.52	174,839
40	Chatham northerly.....	11.93	1959	5.00	6.93	83,644
40	Talford Creek — Twp. of Moore.....	0.19	1960	.....	.....	943
401	Hwy. 2 east of Tilbury to Hwy. 2 west of Tilbury.....	4.53	1960	.....	4.53	14,641
471	Hwy. 79 to Inwood County Road.....	5.75	1960	.....	5.75	131,333
471	Brigden, east and west.....	5.00	1960	.....	5.00	90,977
TOTALS.....		53.97		10.00	33.96	585,308

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
2 NEW SALT SHEDS				
	Chatham by Department Forces.....	36 feet x 28 feet	1961	1961
	Wallaceburg by Department Forces.....	36 feet x 28 feet	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Development roads built.....			0.72
Off-road parks maintained.....	8		
Roads snowploughed and kept open, King's Highways.....	16		627
Roadside picnic places maintained.....	90		
Routine maintenance, King's Highways.....			627
Salt for de-icing roads (raw).....		3,847	627
Salt in sand, stockpiled.....		143	
Sand for winter maintenance.....		1,160	
Scale houses maintained.....	3		
Seeding by department's forces.....(sq. yds.)	890,560		
Shrubs received and planted this year.....	4,084		
Signs erected or replaced.....	4,518		
Snow fence erected, dismantled, stored.....			40
Traffic lights installed this year.....	2		
Weed control.....			15
Zone painting on King's Highways.....(gals.)	6,052		630
Zone painting on Secondary Highways.....(gals.)	90		6.7

DISTRICT No. 2—LONDON**W. L. FRASER, P.Eng., District Engineer****Construction**

During the fiscal year 1960-61, grading, drainage and structures were 95% completed on Highway 401 between Eastwood and the Blair Doon County Road, a distance of 24 miles. Eleven structures were completed on this section and an additional four are now under construction. All grading will be completed early in the 1961-62 construction season. Contracts are being let for the paving of this section plus an additional two miles to connect with Highway 401 at Preston. One significant point might be mentioned in connection with this section of Highway 401 — in excess of 2,000,000 cubic yards of earth were moved in a three-month period.

On Highway 401 from Tempo on Highway 4 through Southwold Township, a distance of 11.56 miles, two contracts have been awarded for grading, drainage and structures with one structure included in each contract.

New construction of Highway 3, including three structures and paving, was completed at the west entrance of St. Thomas, a distance of 1.2 miles. Also on Highway 3, grading, granular base and hot mix paving from Tillsonburg west for 9.3 miles was completed. Alignment, gradients and appearance on approaches to both centres were greatly improved.

On Highway 24 from Brantford north for a distance of 2.3 miles grading, drainage and culverts were completed and the bituminous base course was laid.

On Highway 80 between Walker's Corners and Alvinston, a distance of 4.5 miles, grading, granular base and one structure over the Sydenham River were completed. This section will be paved in fiscal year 1961-62. This is a re-located section of Highway 80.

On Highway 81 between Highways 22 and 7, six culverts were constructed with approaches, in preparation for general grading and paving to be done later.

Resurfacing on Highway 22 was completed between Hickory Corners and Wisbeach, a distance of 14.7 miles.

The connecting link in the town of Strathroy on Highway 81 on Carodoc Street between Metcalfe Street and Front Street was resurfaced.

The only unusual construction feature encountered was the unwatering of three culvert sites on Highway 401. Material encountered was a very free draining granular material — the water table being approximately seven feet above the underside elevation of the footings. Conventional methods of unwatering were tried with no success.

As a result of site tests a vacuum well point system was installed at each location, employing approximately 140 points per location. This proved to be most economical and satisfactory, leaving excavation and construction entirely "in the dry."

It is important to note that the success of such a system depends on the nature of the soil types encountered — hence the advisability of sampling and testing preliminary to the installation of a well point system.



Development Road 382—Otter Creek bridge construction (London District).

Maintenance

Maintenance operations carried out in the district in 1960-61 could not be considered routine. In an effort to curtail expenditures certain phases of maintenance such as prime dust layer, surface treatment, contract hot mix patching, weed cutting, guide rail painting, and weed spraying were restricted or eliminated.

It is generally felt that eliminating certain phases of maintenance which must be repeated annually, such as prime dust layer, weed cutting and guide rail painting, does not create a serious problem, but that eliminating surface treatment, contract hot mix patching, and weed spraying, is merely compounding a problem which must be faced at a later date.

Unexpected heavy snowfalls in late October and early April (1961) resulted in a long winter, but the general overall winter was one of the best in years, resulting in a considerable decrease in expenditure.

The year 1960-61 was the first complete year for two-way radio. Approximately 30 units were in operation in the district, and although an increase in communication costs resulted, it is felt that the advantages derived from closer communications with the field staff justified these costs.

Construction of two weigh scales, opened in February 1960, was completed in early summer.

Illumination of the interchange at Wellington Road and Highway 401 was the major lighting project for the fiscal year. This was carried out by district day labour forces at a cost considerably lower than the estimated figure. Actuated traffic signals and the illumination of the junction of Highway 135 and Wellington Road were carried out in conjunction with the 401 project.

In addition, illumination of the weigh scale sites on Highway 401, and the installation of traffic-actuated signals at Highways 2 and 4 and Commissioners Road were carried out.

As part of the winter relief program, two additional roadside parks were initiated, bringing the total to 13 for the district. In addition to these, 122 roadside picnic places were maintained.

The "Tree Saver" moved approximately 93 trees, being moved either in advance of a grading contract or, as in the case of Highway 2 west of London, due to their proximity to the travelled portion. Because of severe frost conditions in February, this work had to be curtailed until late March.

Experiments were carried out with soil sterilant along guide rail and snow hedge. While definitely controlling growth along guide rail, the possibility of erosion calls for further tests before any definite conclusions can be reached. However, where treatment of snow hedge areas was carried out, not only was weed and grass growth controlled but it appeared that the sterilant acted as a stimulant resulting in exceptional growth of the trees in the treated area.

Approximately 70 men were hired to carry out winter clearing on 15 miles of Highway 401 west of London, in advance of the grading contract. In conjunction with this clearing, 17 men were employed to carry out the necessary fencing of the right-of-way.

As previously pointed out, no weed spraying was carried out in the early part of the year. However, the results of this program or lack of program, combined with a wet spring and numerous complaints received from the public, prompted the district to carry out weed spraying on approximately 120 miles of right-of-way in the early fall.

A new laminated wooden deck was placed on the Waubuno Creek bridge on Highway 2, four miles east of London.

Due to disintegration of the stringers on the Paris high level bridge it was necessary to carry out extensive repairs to the defective members.

During the past fiscal year, 6,499 signs were erected with emphasis on free-way signing and completion of changeover to new standards.

Conversion of 5 bays of heated storage building, including installation of overhead crane and hydraulic hoist, relieved somewhat the congestion at the Lambeth garage.

Toward the end of the fiscal year, installation of the steam heating plant at the Lambeth garage, to replace the existing inadequate overhead oil heating units in the heated storage, was nearing completion.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Lot No.	Con. No.	Type
19	C.P.R.	Oxford County, Dereham Twp.....	7	8	2 lights, 1 bell
19	N.Y.C.	Oxford County, Dereham Twp.....	6	11	2 lights, 1 bell
19	C.N.R.	Norfolk County, Middleton Twp.....	4	5	2 gates
73	N.Y.C.	Elgin County, South Dorchester Twp.....	13	12	2 flash. lights
74	N.Y.C.	Elgin County, South Dorchester Twp.....	17	9	2 flash. lights
81	C.N.R.	Middlesex County, McGillivray Twp.	6	20	1 flash. light
81	C.N.R.	Middlesex County, Adelaide Twp.	22	10	2 flash. lights
1	Town of Parkhill				
2	Town of Strathroy				

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
3	Tillsonburg westerly.....	9.30	1959	9.30	13,933
3, 4	St. Thomas, west entrance.....	1.20	1959	1.20	9,998
24	Brantford north limits to Jct. of Hwys. 5 and 99.....	2.13	1960	Base only	2,750
401	Hwy. 401 and Folden Road.....	.....	.....	.....	684
401	Various locations (invitation bid).....	.....	.....	.....	263
TOTALS.....		12.63		10.50	27,628

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
81	Hwy. 22 to Hwy. 7.....	12.5	41,345	1,080

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
22	Hickory Corners to Wisbeach.....	14.7	21,374

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
3, 4	Kettle Creek, St. Thomas, west entrance.....	1959	1960	Reinforced concrete
3, 4	Dodds Creek east, St. Thomas, west entrance.....	1959	1960	Reinforced concrete
3, 4	Dodds Creek west, St. Thomas, west entrance.....	1959	1960	Rigid frame
80	Sydenham River, Lot 22, Con. 5, Brooke Twp.....	1959	1960	3-span

Development Road

382	Big Otter Creek, Bayham Twp., Lot 4, Con. 4.....	1959	1960	Rigid frame, structural steel
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TOTAL — 5

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
3, 4	St. Thomas, west entrance, and 3 structures.....	1.20	22,174
3	Tillsonburg westerly to Mahahide Twp. line.....	9.30	37,518
80	Walkers Corners to Alvinston.....	4.50	35,743
24	Brantford north limits to Jct. of Hwys. 5 and 99.....	2.30	32,489
81	Jct. of Hwys. 22 and 81 northerly 0.86 mi.....	0.86	6,109
401	Jct. of Hwys. 2 and 401, Eastwood to Drumbo County Road.....	10.61	17,909
401	Drumbo County Road to Waterloo County Road No. 6.....	11.60	32,026
401	2 mi. west of Grand River easterly to interchange Blair County Road.....	1.35	.....
401	Structures.....	.....	.....
401	Horne Creek bridge, Lot 24, Con. 5, Blenheim Twp.....	.....	226
401	C.P.R. overhead, Lot 20, Con. 6, Blenheim Twp.....	.....	678
401	Tenth Concession structure, Lots 6 and 7, Con. 9, Blenheim Twp.....	.....	2,557
401	Nith River bridge, Lot 2, Con. 10, Blenheim Twp.....	.....	760
401	City of London, Highbury Ave. extension to Hwy. 401 (structure).....	.....	2,717
401	Hwy. 401 and Folden Road (structure).....	.....	3,159
22	Hickory Corners to Wisbeach.....	14.70	16,527
	Various locations.....	.....	983
Development Road			
382	Big Otter Creek, Lot 4, Con. 4, Bayham Twp.....	0.24	1,668
TOTALS.....		56.66	213,243

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
76	3 mi. north of West Lorne to Thames River.....	3.50	1,105.0
80	Walkers Corners to Alvinston.....	8.80	989.5
81	Hwy. 22 to Hwy. 7.....	14.00	6,357.0
	Miscellaneous in District 2 — shoulders, etc.....	.....	23,409.4
TOTALS		26.30	31,860.90

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
3	Tillsonburg westerly to Malahide Twp. line....	9.30	1959	5.30	4.0
3, 4	St. Thomas, west entrance, including 3 structures — Kettle Creek, Dodds Creek east and Dodds Creek west.....	1.20	1959	1.01	0.19
24	Brantford north limits to the Jct. of Hwys. 5 and 99.....	2.3	1960	.....	1.4
80	Walkers Corners to Alvinston.....	4.5	1959	.....	4.2
401	Eastwood, Hwy. 2 interchange to County Road 1.8 mi. north of Drumbo.....	10.61	1959	.....	10.08
401	Drumbo County Road to Waterloo County Road No. 6.....	11.6	1959	.....	11.3
401	2 mi. west of Grand River easterly to interchange Blair County Road.....	1.35	1959	.....	1.35
81	Jct. of Hwy. 22 northerly 0.86 mi.....	0.86	1960	.....	0.86
TOTALS		41.72		6.31	33.38

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
3	Tillsonburg westerly to Malahide Twp. line.....	9.3	1959	.....	9.3	199,246
3, 4	St. Thomas, west entrance.....	1.2	1959	.....	1.2	50,631
24	Brantford north limits to the Jct. of Hwys. 5 and 99.....	2.13	1960	.....	1.27	64,573
80	Walkers Corners to Alvinston.....	4.5	1959	.....	4.4	111,604
81	Jct. Hwy. 22 northerly 0.86 mi.....	0.86	1960	.....	0.86	12,923
401	Jct. of Hwys. 2 and 401 Eastwood easterly to Drumbo County.....	10.61	1959	.....	10.08	44,797
401	Jct. Drumbo County Road to Waterloo County Road No. 6.....	11.6	1959	.....	11.3	3,826
401	Highbury Avenue extension (structure).....	.....	.....	.....	.....	4,390
401	2 mi. west of Grand River easterly to interchange Blair County Road.....	1.35	1960	.....	1.35	.....
401	Victoria Road (structure).....	.....	.....	.....	.....	1,200
401	Foldens Road (structure).....	.....	.....	.....	.....	5,897
	Various locations.....	.....	.....	.....	.....	920
TOTALS		41.55		.....	39.76	500,007

New Buildings

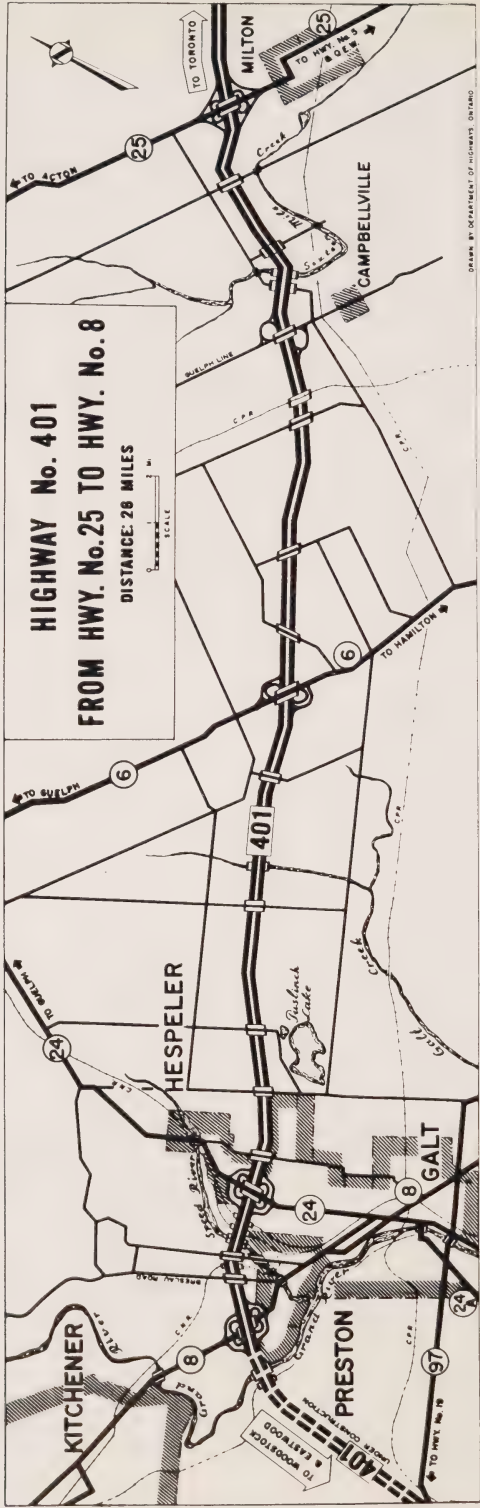
Hwy. No.	Location	Type of Building	Begun	Completed
24	Dundurn patrol yard.....	Salt shed	1961	1961
3	New Sarum patrol yard.....	Salt shed	1961	1961
3	Wallacetown patrol yard.....	Salt shed	1961	1961
59	Norwich patrol yard.....	Salt shed	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		120.10	26.3
Off-road parks maintained.....	13		
Roads snowploughed and kept open, King's Highways.....	21		541.4
Roadside picnic places maintained.....	122		
Routine maintenance, King's Highways.....			541.4
Salt for de-icing roads (raw).....		12,971.00	541.4
Salt in sand, stockpiled.....		1,867.86	
Sand for winter maintenance.....		39,969.75	
Scale houses maintained.....	3		
Seeding by department's forces..... (sq. yds.)	1,224,520		
Shrubs received and planted this year.....	3,817		
Signs erected or replaced.....	3,267		
Snow fence erected, dismantled, stored.....			83.0
Snow hedges planted this year.....			2.8
Traffic lights installed this year.....	2		
Weed control.....			124
Zone painting on King's Highways..... (gals.)	6,171		620



Zone striping on Highway 4 at Kettle Creek bridge (London District).



DISTRICT No. 3—STRATFORD**L. D. BARRETT, P.Eng., District Engineer****Construction**

During the fiscal year ending March 31, 1961, work was completed on seven carry-over contracts and six new contracts. Five new contracts were begun but not completed.

Grading, culverts and granular base were completed on the following highways: Highway 97, Galt westerly for 7.8 miles. An overhead structure over the C.P.R. was included in this contract, eliminating a very dangerous level crossing. Highway 100, Thamesford to Kintore, completed.

Grading, culverts, granular base and hot mix paving were completed on Highway 19, Woodstock northerly for 8.7 miles; Highway 19, Stratford to Milverton, 16.25 miles; Highway 100, paving completed from Thamesford to Kintore and street widening in the village of Thamesford and Kintore improved the parking situation. On Highway 19, Hickson northerly to Shakespeare, the grading and structure were 70% complete. Paving will be completed early in 1961.

Construction of culverts and clearing was started on Highway 23, Listowel to Teviotdale.

Hot mix paving was completed on Highway 97, Galt westerly for 7.04 miles.

Work commenced on a major project on Highway 21, at Goderich, including an overhead structure over the C.N.R., a bridge over the Maitland River, and a subway under the C.P.R. Considerable heavy grading was completed and all structural steel is in place. When construction is complete, several dangerous curves and grades will be eliminated. Two old and narrow structures and one narrow subway will be replaced.

Work was resumed on the structure over the Grand River at Freeport. All structural steel is in place. This structure should be completed early in 1961.

Work was started on the Nith River bridge and Wilmot Creek bridge on Highway 97, southerly from the village of Plattsville. Structures and 1.36 miles of grading to be completed in 1961.

Construction commenced on a special design structure in the town of Harrison. This structure replaces two bridges, one on Highway 87 and one on John Street and will greatly improve visibility.

A new special design structure was completed and opened to traffic on Highway 21, 5.5 miles north of Grand Bend. An open flume and spillway with dissipators was constructed on the downstream end to control erosion.

On Highway 24, Orangeville to Highway 51, property for future widening was acquired and a fencing contract completed.

Due to adverse weather conditions last spring, grading was delayed, but favourable weather made good progress possible and extended the season late in the fall.

Maintenance

The past winter was not as severe as it has been for the last number of years, and as a result considerable saving was effected on equipment rentals and the amounts of salt and sand used.

A small zone striper was built by the district to facilitate the painting of edge lines, stop blocks, and at other locations where it is difficult to operate the large zone striping machine.

Gravel was applied to the gravel surfaces before the spring break-up and priming of these surfaces was carried out, producing a good driving surface for the summer.

Eight standard storage buildings were erected to be used for salt and equipment storage on six different patrols. A personnel building was erected at the St. Marys patrol headquarters.

Major repairs were carried out by the district bridge crew on eight bridges throughout the district.

Shoulder gravelling was carried out in various locations in order to maintain shoulders flush with the pavement edge.

A very limited weed spraying program was carried out.

Several picnic sites were improved, the cost of this work was subsidized by the Dominion Government.

Approximately 600 dead and dangerous trees were removed throughout the district.



West Montrose covered bridge on Highway 86 (Stratford District).

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Lot No.	Con. No.	Flash. Lights Bell
7	C.N.R.	Perth County, Blanshard Twp.....	17 and 18	15	1*
7	C.N.R.	Perth County, Blanshard Twp.....	18	E&W M.R.	1*

* These two signals were previously wigwag and bell protectors, now changed as shown.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
19	Woodstock northerly.....	8.7	1959	3.0	5.7	23,872
19	Stratford to Milverton.....	16.25	1959	5.0	11.25	26,134
21	5.5 mi. north of Grand Bend.....	0.33	1959	....	0.33	731
97	Galt westerly.....	7.04	1960	....	7.04	19,857
100	Thamesford to Kintore.....	6.32	1960	....	6.32	16,615
Old 86B	Old Hwy. 86B, 2 mi. east to 3.74 mi. east of Elmira.....	1.74	1960	....	1.74	604
TOTALS.....		40.38		8.0	32.38	87,813

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
97	Galt westerly.....	7.8	26,973	1,000
100	Thamesford to Kintore.....	5.56	19,926	800
24	Jct. Hwy. 51 to Orangeville.....	8.0	28,611	1,230
86	Elmira to 1 mi. west of Wallenstein.....	4.0	2,392	108
86	Old Hwy. 86 at West Montrose.....	3.0 -	36,553	1,760
86	Jct. of Hwy. 7 to 6 mi. east of Elmira.....	8.0 -		
97	South of Plattsville to 8 mi. west of Galt.....	8.0	22,820	880
100	Jct. of Hwy. 100 to Kintore.....	10.0	27,240	1,328
TOTALS.....		54.36	164,515	7,106

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
97	West of Galt.....	1959	June 1960	C.P.R. overpass
TOTAL - 1				

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
19	Woodstock northerly.....	8.7	27,200
19	Stratford to Milverton.....	16.25	22,000
97	Galt westerly.....	7.8	17,660
97	Galt westerly.....	7.04	8,825
100	Thamesford to Kintore.....	6.32	12,460
TOTALS.....		46.11	88,145

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
97	0.4 mi. west of County Road 15 to Plattsville, east limits.....	7.08	3,696.00
86	Jct. of Hwys. 7 and 86 to Cox Creek.....	8.01	3,351.00
86	Zubers Corner to West Montrose.....	2.64	376.50
86	Waterloo-Well line to 5.72 mi. east of Dorking.....	3.75	2,210.22
100	Kintore to Jct. of Hwys. 7 and 100.....	9.24	4,107.00
24	Jct. of Hwys. 24 and 51, Coulterville to Orangeville, south limits.....	7.17	2,643.00
24	Orangeville, south limits to Orangeville conn. link .....	.50	7.50
	Various locations — pavement patching.....		2,432.00
	Various locations — shoulders.....		8,999.13
TOTALS		38.39	27,822.35

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
86B	Old Hwy. 86B, 2 mi. east to 3.74 mi. east of Elmira.....	1.74	1960	.....	1.74
21	Maitland River and vicinity.....	1.46	1960	.....
8	Grand River at Freeport.....		1960	.....
19	Hickson northerly to Hwy. 7.....	7.83	1960	.....
21	5.5 mi. north of Grand Bend.....	0.33	1959	0.20	0.13
97	Galt westerly.....	7.8	1959	4.0	3.8
100	Thamesford to Kintore.....	5.56	1959	5.0	0.56
100	Int. of Hwys. 2 and 100 to north limits of Kintore.....	6.32	1960	.....	6.32
TOTALS.....		31.04		9.20	12.55

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
19	Woodstock northerly.....	8.70	1959	8.70	41,218
19	Stratford to Milverton.....	16.25	1959	16.25	13,000
21	5.5 mi. north of Grand Bend.....	0.33	1959	0.33	1,621
97	Galt westerly.....	7.80	1959	7.80	290,675
86B	Old Hwy. 86B, 2 mi. east to 3.74 mi. east of Elmira.....	1.74	1960	1.74	9,224
100	Thamesford to Kintore.....	5.56	1959	5.56	38,873
100	Int. of Hwys. 2 and 100 to Kintore north limits.....	6.32	1960	6.32	33,394
TOTALS.....		46.70		46.70	428,005

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
100	St. Mary's.....	Frame, house tools, personnel	1960	Jan. 12/61
83	Grand Bend.....	Frame, truck storage	1960	Feb. 1961
23	Monkton.....	Frame, salt shed	1960	Feb. 1961
86	Elmira.....	Frame, salt shed	1960	Nov. 1960
87	Wroxeter.....	Frame, truck storage	1960	Sept. 1960
8	Clinton.....	Frame, salt shed	1961	Feb. 1961
23	Listowel.....	Frame, salt shed	1961	Mar. 1961
7, 8	New Hamburg.....	Frame, salt shed	1961	Mar. 1961
7, 8	New Hamburg.....	Frame, truck storage	1961	Mar. 1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		85.75	39.78
Development roads built.....			29.50
Off-road parks maintained.....	12		
Roads snowploughed and kept open, King's Highways.....	18		622.16
Roadside picnic places maintained.....	200		
Routine maintenance, King's Highways.....			622.16
Salt for de-icing roads (raw).....		8,096.45	622.16
Salt in sand, stockpiled.....		2,214.52	
Sand for winter maintenance.....		54,455.76	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	1,947,616		
Signs erected or replaced.....	2,840		
Snow fence erected, dismantled, stored.....			170.00
Snow hedges planted this year.....			.10
Weed control.....			3.00
Zone painting on King's Highways.....(gals.)	6,876.50		582.80
Zone painting on Secondary Highways.....(gals.)	347.00		31.50



New bridge at West Montrose on Highway 86 (Stratford District).

DISTRICT No. 4—HAMILTON**J. C. THATCHER, P.Eng., District Engineer****Construction**

The construction year of 1960-61 marked the opening of the completed section of Highway 401 in the Hamilton district. This section running from Highway 25 to Highway 8 covers a length of 26.16 miles. Interchanges were completed at Campbellville, Highway 6 and Highway 8, and ten (10) other structures were completed. Two types of paving were used. Nine-inch reinforced concrete from Highway 25 to Highway 6 and 5.5-inch asphalt from Highway 6 to Highway 8. As an experimental measure a mixture of linseed oil and kerosene was sprayed on the concrete pavement. It is hoped that this treatment will reduce scaling and the results will be assessed during the next few years.

During the year a start was made on the construction of the Homer Skyway carrying the Q.E.W. over the Welland Canal, and by the end of the fiscal year all contracts were ahead of schedule.

A start was made on the Chedoke Expressway which forms part of Highway 403 through the city of Hamilton. The reconstruction of the road through the Six Nations Reserve under a joint project with the Dominion Government and the construction of a service road and structure along the north side of the Q.E.W. to a new Niagara Parks Commission recreational area were also started.

Other completed contracts include the grading and paving of Highway 6 from Caledonia to Hagersville, new structures and approaches at Cayuga on Highway 54, and a new structure and by-pass of the village of Onondaga on Highway 54.

Maintenance

A new nine-bay office was constructed at the northern end of the Burlington Skyway and the district began operations from this location on Monday, October 24, 1960.

The section of Highway 401 in the Hamilton district, extending from Highway 25 to Highway 8 at Preston, was officially opened to the public on November 17, 1960. The overall length of this section is 26 miles and includes interchanges at Highway 25, Campbellville Road, Highway 6, Highway 24 and Highway 8.

New bridges were completed and opened over the C.N.R. on Highway 54 at the north limits of Cayuga, over Fairchild Creek on Highway 54 and over the Boston and McKenzie Creeks on Highway 6.

In this district 74 roadside picnic areas were maintained with a total of 170 picnic tables in use. A total of 4,302,760 square yards of seeding was carried out with the bulk of this acreage being on the new section of Highway 401. Some 900 miles of zone painting were completed and a total number of 4,487 signs were erected. A fixed time signal was installed at Merriton on Highway 58 and fully traffic-actuated signals were installed at McDonald Avenue and the Q.E.W. in Niagara Falls and at Caledonia at the junction of Highways 6 and 54.



Designers' conception of the new \$17,000,000 high-level bridge across the Welland Canal at Homer, near St. Catharines, Ontario.



Highway 401 underpass at Highway 25 interchange (Hamilton District).

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Lot No.	Con. No.	Type
6	C.N.R.	Haldimand County, Walpole Twp.....	9	10	2 flash. lts., 1 bell
58	C.N.R.	Welland County, Thorold Twp.....	Twn. Thorold		2 flash. lts., 1 bell
99	C.N.R.	Wentworth County, Beverly Twp.....	6	1	2 flash. lts., 1 bell
3	N.Y.C.	Haldimand County, Canborough Twp.....	10	3	2 flash. lts., 2 short arm gates, 1 bell
3A	N.Y.C.	Welland County, Wainfleet Twp.....	19, 20	6	2 flash. lts., 2 short arm gates, 1 bell
Q.E.W.	C.N.R.	Halton County, Nelson Twp.....	17	Brants Blk.	2 flash. lts., 1 bell on each lane
58	C.N.R.	Welland County, Thorold Twp.....	47		2 flash. lts., 1 bell
25	C.N.R.	Halton County, Nelson Twp.....	15, 16	2	2 flash. lts., 1 bell
7	C.P.R.	Wellington County, Guelph Twp.....	1	2, 3	2 flash. lts., 1 bell
58	C.N.R.	Lincoln County, Grantham Twp.....	11	9	2 flash. lts., 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Road allowance between Lots 15 and 16, Puslinch Twp.....	1.00	1959	.....	1.00	811
54	C.N.R. overhead at Cayuga....	0.30	1959	.....	0.30	211
401	Hwy. 24 interchange.....	0.66	1959	.....	0.66	2,721
6	Caledonia to Hagersville.....	7.80	1959	.....	7.80	28,411
401	County road to Breslau.....	0.07	1959	.....	0.07	986
401	County road to Hespeler.....	0.06	1959	.....	0.06	849
54	Onondaga revision.....	2.93	1959	.....	2.93	8,920
401	Township road to Speedville....	0.24	1959	.....	0.24	558
401	Road allowance Con. 7, Lot 25, Puslinch Twp.....	0.63	1959	.....	0.63	1,728
401	Hwy. 6 interchange.....	0.54	1959	.....	0.54	1,635
401	County road between Twps. of Puslinch and Waterloo.....	0.40	1959	.....	0.40	1,302
401	Hwy. 8 interchange and Grand River bridge.....	1.38	1959	.....	1.00	9,986
401	Road allowance, Lots 30 and 31, Con. 8, Puslinch Twp.....	0.60	1959	.....	0.60	1,375
401	Hwy. 25 to Campbellville interchange.....	5.10	1960	.....	0.46	4,941*
401	Campbellville interchange to Hwy. 6.....	7.37	1960	.....	0.46	5,051*
7	From Hwy. 10 to Georgetown....	6.60	1960	.....		369
401	Hwy. 6 westerly.....	6.80	1960	.....	6.80	57,987
401	From 3.66 mi. east of Hwy. 24 to 2.47 mi. west of Hwy. 24....	6.13	1960	.....	6.13	63,396
Q.E.W.	Detours and approaches—Homer bridge and Welland Canal.....	0.80	1960	.....	0.80	6,293
3	Town of Dunnville.....	0.97	1960	.....	0.97	13,538
	TOTALS.....	50.38			31.85	211,068

* Bridge decks, interchange legs and deceleration lanes.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
97	From 4 mi. west of Hwy. 6 westerly.....	0.5	2,200	30
52	From Jct. of Hwys. 8 and 52 north for 2 mi.....	2.0	7,000	120
	TOTALS.....	2.5	9,200	150

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
3, 3C, 8, 20, 56, 58	Vicinity of Port Colborne, Welland and Fort Erie	10.0	9,990
3, 6, 24, 54	Vicinity of Jarvis and Port Dover.	3.2	3,293
5, 6, 7 25	Vicinity of Guelph and Hamilton.....	7.0	6,987
TOTALS		20.2	20,270

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
6	From south of Hwy. 53 to 0.5 mi. south of Mount Hope (44-foot pavement).....	3.45	20,700	1,014
Q.E.W.	North-bound lane from Fort Erie to Niagara Falls (Hwy. 20) (23-foot pavement).....	15.00	44,817	2,221
TOTALS		18.45	65,517	3,235

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
5	2 mi. north of Palermo.....	1958	1960	Steel truss deck
401	2 mi. northeast of Preston.....	1959	1960	Conc., rigid frame
401	1.75 mi. northeast of Preston.....	1959	1960	Conc. rigid frame
401	1 mi. north of Preston.....	1959	1960	Cont. steel beam
401	1 mi. north of Preston.....	1959	1960	Cont. steel beam
54	C.N.R. overhead in Cayuga.....	1959	1960	Simple composite steel beam
401	Hwy. 24 interchange.....	1959	1960	Cont. conc. box girder
6	4.25 mi. south of Caledonia.....	1959	1960	Conc., rigid frame
6	2.25 mi. south of Caledonia.....	1959	1960	Conc., rigid frame
401	County road to Breslau.....	1959	1960	Cont. conc. girder
54	1 mi. west of Onondaga.....	1959	1960	Cont. composite steel beam
401	County road to Hespeler.....	1959	1960	Cont. conc. box girder
401	Township road to Speedville.....	1959	1960	Cont. conc. girder
401	Road allowance, Con. 7, Lot 25, Puslinch Twp.....	1959	1960	Cont. conc. box girder
401	Hwy. 6 interchange.....	1959	1960	Conc. box girder
401	County road between Twps. of Puslinch and Waterloo.....	1959	1960	Cont. conc. box girder
401	Hwy. 8 interchange.....	1959	1960	Conc. beam and slab
401	County road 1 mi. east of Morriston, Lots 30 and 31, Con. 8.....	1959	1960	Prestressed con. beam
TOTAL — 18				

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Work Begun	Miles Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61	Pav. Width
401	Hwy. 25 to Campbellville inter- change.....	1960	.....	.24	3,311	Var.
401	Campbellville interchange to Hwy. 6.....	1960	.....	.30	4,385	Var.
TOTALS.....			.....	.55	7,696	

NOTE: Acceleration and deceleration lanes.

Concrete Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61
401	From Hwy. 25 to Campbellville interchange.....	5.10	1960	.....	5.10	144,230
401	From Campbellville interchange to Hwy. 6.....	7.37	1960	.....	7.37	207,634
	TOTALS.....	12.47		.....	12.47	351,864

NOTE: Each lane is 24 feet wide.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
401	Road allowance between Lots 15 and 16, Puslinch Twp.....	1.00	335
401	Hwy. 24 interchange.....	0.66	697
6	Caledonia to Hagersville.....	7.80	14,763
401	County road to Breslau.....	0.07	439
401	County road to Hespeler.....	0.06	382
54	Onondaga revision.....	2.93	4,307
401	Road allowance, Con. 7, Lot 25, Puslinch Twp.....	0.63	1,472
401	County road between Twps. of Puslinch and Waterloo.....	0.40	1,790
401	Hwy. 8 interchange.....	1.38	5,562
401	Road allowance, Lots 30 and 31, Con. 8, Puslinch Twp.....	0.60	597
401	Hwy. 25 to Campbellville interchange.....	5.10	54,908
401	Campbellville interchange to Hwy. 6.....	7.37	82,073
401	From Hwy. 6 westerly.....	6.80	44,428
401	From 3.66 mi. east of Hwy. 24 to 2.47 mi. west of Hwy. 24.....	6.13	50,365
Q.E.W.	Detours and approaches to Homer bridge and Welland Canal.....	0.80	4,195
	TOTALS.....	41.73	266,313

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
Q.E.W.	Bronte to Fort Erie.....	71.2	1,542
2	Bronte to Brantford.....	28.7	382
3	Fort Erie to Simcoe.....	85.5	1,878
3A	Chambers Corners to Welland.....	9.3	88
3C	Fort Erie to Ridgeway.....	6.8	103
5	Palermo to Brant County line.....	27.7	816
6	Port Dover to Guelph.....	59.3	1,420
7	Guelph to Hwy. 10.....	30.4	441
8	Galt to Niagara Falls.....	57.8	1,588
8A	St. Davids to Queenston.....	2.8	3
20	Burlington to Niagara Falls.....	45.9	606
24	Simcoe to Port Dover.....	9.3	305
25	Queen Elizabeth Way to Hwy. 7.....	22.2	868
52	Hwy. 2 to Hwy. 97.....	13.9	59
53	Hwy. 20 to Hwy. 2.....	7.2	45
56	Elfrida to Hwy. 3.....	14.8	176
54	Cayuga to Cainsville.....	26.9	532
57	Bismark to Becketts bridge.....	8.8	141
58	Port Colborne to Hwy. 8.....	15.7	606
97	Hwy. 6 to Galt.....	13.7	60
99	Dundas to Hwy. 24.....	16.9	25
102	Dundas to Hamilton.....	4.0	34
	TOTALS.....	578.8	11,718

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
401	From 0.16 mi. west of Hwy. 24 westerly including Speed River.....	0.60	1959	0.40	0.20
401	From west of Speed River westerly for 1.58 mi.....	1.58	1959	1.30	0.28
401	Hwy. 24 interchange.....	0.66	1959	0.50	0.16
6	Caledonia to Hagersville.....	7.80	1959	.....	7.80
54	Onondaga revision.....	2.93	1959	.....	2.93
54	C.N.R. overhead at Cayuga.....	0.30	1959	.....	0.30
401	Hwy. 6 interchange.....	0.54	1959	.....	0.54
401	County road between Twps. of Puslinch and Waterloo.....	0.40	1959	.....	0.40
401	Hwy. 8 interchange and Grand River bridge.....	1.38	1959	.....	1.38
	Q.E.W. Service Road — Scott Street in St. Catharines.....	0.40	1959	.....	0.40
401	Road allowance, Lots 30 and 31, Con. 8, Puslinch Twp.....	0.60	1959	.....	0.60
Q.E.W.	Detours and approaches for Homer bridge and Welland Canal.....	0.80	1960	.....	0.80
20	Approaches to Burlington Canal lift bridge.....	0.50	1960	.....	0.30
	TOTALS.....	18.49		2.20	16.09

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Road allowance between Lots 15 and 16, Puslinch Twp.....	1.00	1959	1.00	.....	1,383
54	C.N.R. overhead at Cayuga.....	0.30	1959	.....	0.30	7,804
401	Hwy. 401 interchange.....	0.66	1959	0.50	0.16	7,104
6	Caledonia to Hagersville.....	7.80	1959	.....	7.80	376,266
401	County road to Breslau.....	0.07	1959	.....	0.07	14,350
401	County road to Hespeler.....	0.06	1959	.....	0.06	9,309
54	Onondaga revision.....	2.93	1959	.....	2.93	102,127
401	Township road to Speedville.....	0.24	1959	.....	0.24	6,280
401	Road allowance, Con. 7, Lot 25, Puslinch Twp.....	0.63	1959	.....	0.63	10,736
401	Interchange at Hwy. 6.....	0.54	1959	.....	0.54	21,221
401	County road between Twps. of Puslinch and Waterloo.....	0.40	1959	.....	0.40	11,557
401	Hwy. 8 interchange and Grand River bridge.....	1.38	1959	.....	1.00	39,797
	Q.E.W. service road — Scott Street in St. Catharines.....	0.40	1959	.....	0.40	3,794
401	Road allowance, Lots 30 and 31, Con. 8, Puslinch Twp.....	0.60	1959	.....	0.60	5,094
401	From Hwy. 25 to Campbellville interchange.....	5.10	1960	.....	5.10	239,916
401	From Campbellville inter- change to Hwy. 6.....	7.37	1960	.....	7.37	359,813
7	From Hwy. 10 to Georgetown.....	6.60	1960	.....	.....	26,476
401	From Hwy. 6 interchange west- erly.....	6.80	1960	.....	6.80	435,081
401	From 3.66 mi. east of Hwy. 24 to 2.47 mi. west of Hwy. 24....	6.13	1960	.....	6.13	144,727
Q.E.W.	Detours and approaches for Homer bridge, Welland Cnl.....	0.80	1960	.....	0.80	47,366
20	Approaches to Burlington Canal lift bridge.....	0.50	1960	.....	0.30	3,785
	TOTALS.....	50.31		1.50	41.63	1,873,986

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
6	Town of Hagersville.....	1.15	1960	.....	.....	9,263
3	Town of Dunnville.....	0.97	1960	.....	0.97	67,533
	TOTAL.....	2.12		.....	0.97	76,796

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
2	Town of Burlington.....	District No. 4 Headquarters	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	7.50	0.50
Off-road parks maintained.....	1	.....	.....
Roads snowploughed and kept open, King's Highways.....	23	.....	617.92
Roadside picnic places maintained.....	73	.....	.....
Routine maintenance, King's Highways.....	.....	.....	617.92
Salt for de-icing roads (raw).....	.....	517.84	.....
Salt in sand, stockpiled.....	.....	9,346.47	.....
Sand for winter maintenance.....	.....	72,536.90	.....
Scale houses maintained.....	5	.....	.....
Seeding by department's forces.....(sq. yds.)	4,302,760	.....	.....
Shrubs received and planted this year.....	1,907	.....	.....
Signs erected or replaced.....	4,487	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	64
Traffic lights installed this year.....	3	.....	.....
Weed control .....	.....	.....	1.8
Zone painting on King's Highways.....(gals.)	14,523.5	.....	900

DISTRICT No. 5—OWEN SOUND**H. GREENLAND, P.Eng., District Engineer****Construction**

Bridge construction was the major feature in the Owen Sound district during 1960. Two bridges were erected on Highway 4 immediately west of Hanover; a reinforced concrete structure over the C.N.R. and a three-span structural steel bridge over the Saugeen River. This contract also included a mile of grading with the new road some 15 feet higher than the original to overcome high water during spring floods. Construction was also started on a structural steel bridge over the South Saugeen River on Highway 6 in the town of Mount Forest to replace a one-lane bridge of the overhead truss type. Included in this contract is one mile of grading to improve visibility, grades, and alignment. Two structural steel bridges will be erected over the Nottawasaga River: one on Highway 89, three miles east of Alliston and the other at Wasaga Beach on Highway 92. Work on these structures was begun late in 1960 and is expected to be completed in the summer of 1961. Two more bridges were completed during the year. The Stokes River bridge on Highway 6, Ferndale North, and the Nottawasaga River bridge, Highways 10 and 24, Camilla North, were opened to traffic in the fall. Both these bridges were of reinforced concrete.

Bailey bridges were used as detours on four of the above structures. A fifth was erected by district forces at Holland Centre, on Highway 10, to replace the original structure which was badly damaged by a transport on November 15. The work included the construction of approaches and paving. The bridge was opened to traffic on November 17.

Grading and hot mix paving were completed from Camilla to Primrose, on Highways 10 and 24, and Crownhill to Craighurst, on Highway 93.

A grading contract was completed on Highway 6, Ferndale to Miller Lake on the Bruce Peninsula, which eliminated many miles of twisting, narrow road.

Maintenance

In addition to normal maintenance, many other activities received our attention.

Extra crews were taken on under the winter works relief program on day labour clearing of dead boughs and trees. This work was concentrated mainly in the easterly section of the district. In addition, six picnic sites were cleared of brush and tree growth under a Dominion-Provincial works program, in preparation for the coming tourist season.

Illumination was installed at the intersection of Highways 26 and 27 at Midhurst and a large illuminated sign was erected on Highway 27 for northbound traffic to Midland and Penetang.

Six salt sheds were constructed at strategic locations to reduce costs by permitting use of bulk salt.

The "Tree Saver" worked for several months on Highway 400 extension and received much favourable comment.

Additional radios were installed in patrol trucks prior to the onset of winter. There are now 23 mobile units and three base stations in operation. There is no doubt that these radios coordinate equipment movement and thereby speed up the removal of snow and ice. The Department can also give the travelling public first-hand information on road conditions. Also, if a patrol truck is the first on the scene of an accident, the O.P.P. and medical aid can be advised by the district office, thereby possibly saving life. The O.P.P. appreciate this co-operation.

The winter snowfall was comparatively light east of Owen Sound this winter and winter costs were below that of the 1959-60 season.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
6	C.N.R.	Grey County, Normanby and Egremont Twps.	2 lights, 1 bell
6	C.N.R.	Grey County, Egremont Twp.	1 light
26	C.N.R.	Simcoe County, Nottawasaga Twp.	1 bell*
90	C.N.R.	Simcoe County, Essa Twp.	2 lights, 1 bell

* Replaces wigwag.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
4	Roseborough bridge, 1 mi. west of Durham	.....	1960	.....	.....	81.26
4	Saugeen River bridge at Hanover.	0.80	1960	.....	0.60	1,721
6	South Saugeen River bridge at Mt. Forest	0.70	960	.....	0.20	815
6	4 mi. north of north limits of Mt. Forest	.....	1960	.....	.....	310.71
10, 24	Orangeville to Camilla*	6.07	1959	6.07	.....	851.49
10, 24	Camilla to Primrose	5.98	1960	.....	5.98	21,029
89	Nicholson River bridge detour	.....	1960	.....	.....	121.23
92	Nottawasaga River Bridge at Wasaga Beach	0.16	1960	.....	0.16	108
90	Pine River bridge at Angus	.....	1960	.....	.....	125.95
93	Crownhill to Craighurst	7.00	1960	.....	7.00	16,806
400	Crownhill northerly	10.04	1960	10.04	.....	12,849
TOTALS		30.75		16.11	13.94	33,999.93

* Resurfacing town of Orangeville.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
6	1 mi. north of Wiarton to 14 mi. north of Wiarton	13	35,250.57	702.10
6	4 mi. north of Ferndale to 12 mi. north of Ferndale	8	19,476.91	363.23
90	Extension in Barrie (county road 7 and Dunlop Street)	1	6,076.00	112.98
91	Stayner to Duntroon	5	13,214.28	269.32
TOTALS		27	74,017.76	1,447.63

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
4	West limits of Hanover.....	1960	1960	Structural steel
4	West limits of Hanover.....	1960	1960	Reinforced concrete
6	5 mi. north of Ferndale.....	1959	1960	Reinforced concrete
10, 24	3 mi. north of Camilla.....	1960	1960	Reinforced concrete
TOTAL — 4				

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
4	Saugeen River bridge, west limits of Hanover.....	0.8	9,184
6	South Saugeen River bridge, south limits of Mount Forest.....	0.7	6,000
6	Ferndale Corners to Miller Lake.....	10.0	113,284
6	3 mi. north of Wiarton and 9 mi. north of Wiarton.....	13.0	9,982
10, 24	Camilla to Primrose.....	5.98	79,010
24, 4	Flesherton to Hanover and Singhampton, Primrose, Alliston.....	59.53	9,985
93	Crownhill to Craighurst.....	7.0	69,035
TOTALS.....		97.01	296,480

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
4	Flesherton to Walkerton.....	32.40	1,021.50
6	Arthur to Tobermory — various.....	93.96	8,958.00
9	Jct. of Hwys. 9 and 104 to Arthur-Kincardine — various.....	46.29	427.50
10	Orangeville to Owen Sound — various.....	58.27	807.00
12	Jct. of Hwys. 12 and 27 to Midland.....	0.83	7.50
21	Jct. of Hwys. 9 and 21 to Jct. of Hwys. 6 and 21 — various.....	17.40	115.50
24	Shelburne to Collingwood — various.....	30.81	1,020.00
26	Barrie to Owen Sound — various.....	58.80	3,317.50
27	Cookstown to Penetang — various.....	48.45	549.00
89	Cookstown to Jct. of Hwys. 89, 10, 24 — various.....	21.77	1,289.50
90	Barrie to Angus.....	11.23	30.00
91	Stayner to Duntroon.....	5.09	6,352.50
92	Elmvale to Wasaga Beach.....	8.67	43.50
93	Craighurst to Jct. of Hwys. 93 and 27.....	10.32	21.00
TOTALS.....		444.29	23,960.00

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Years	Miles Compl. Previous Year	Miles Compl. 1960-61
4	Saugeen River bridge, west limits of Hanover.....	0.8	1960	....	0.8
6	South Saugeen River bridge, south limits of Mount Forest.....	0.7	1960	....	0.2
6	Ferndale Corners to Miller Lake.....	10.0	1959	4.0	6.0
10, 24	Camilla to Primrose.....	5.98	1959	....	5.98
92	Wasaga Beach bridge.....	0.16	1960	....	0.16
93	Crownhill to Craighurst.....	7.0	1959	....	7.0
TOTALS.....		24.64		4.0	20.14



Bridge construction on Highway 6 at Mount Forest (Owen Sound District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
4	Saugeen River bridge, west limits of Hanover.....	0.8	1960	....	0.8	31,657
6	South Saugeen River bridge, south limits of Mount Forest....	0.7	1960	....	0.2	24,053
6	Ferndale Corners to Miller Lake....	10.0	1959	2.0	8.0	74,280
10, 24	Camilla to Primrose.....	5.98	1959	....	5.98	175,671
93	Crownhill to Craighurst.....	7.0	1959	....	7.0	192,400
TOTALS.....		24.48		2.0	21.98	498,061

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
21	Twp. of Bruce.....	Bulk salt storage	1960	1960
6	Twp. of Amabel.....	Bulk salt storage	1961	1961
6, 10	Twp. of Derby.....	Bulk salt storage	1961	1961
East of 10	Twp. of Artemesia.....	Bulk salt storage	1961	1961
6, 21	Twp. of Derby.....	Bulk salt storage	1961	1961
26	Twp. of St. Vincent.....	Bulk salt storage	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		100	27
Development roads built.....			7.35
Off-road parks maintained.....	6		
Roads snowploughed and kept open, King's Highways.....	15		534.27
Roadside picnic places maintained.....	80		
Routine maintenance, King's Highways.....			534.27
Salt for de-icing roads (raw).....		8,560	534.27
Salt in sand, stockpiled.....		3,607	
Sand for winter maintenance.....		69,606	
Seeding by department's forces.....(sq. yds.)	1,219,680		
Shrubs received and planted this year.....	3,780		
Signs erected or replaced.....	3,099		
Snow fence, erected, dismantled, stored.....			164
Traffic lights installed this year.....	4		
Zone painting on King's Highways.....(gals.)	6,083		551



Grading on Highway 10—5 miles south of Primrose (Owen Sound District).

DISTRICT No. 6—TORONTO**C. FRASER, P.Eng., District Engineer****Construction**

During the fiscal year 1960-61 good progress was made on the work of controlling access on the Q.E.W. and of increasing its capacity. Widening of the structures over Oakville Creek and the Credit River was virtually completed. In addition, extensive repairs were carried out on the original structure over the Credit River. The interchanges at Bronte and Shook's Hill were completed and opened to traffic.

Worthy of note is the new type guard-rail that was installed in the median at the interchange at Bronte and Shook's Hill. This guard-rail will be used extensively on multi-lane facilities where the median is narrow. It is designed to prevent vehicles from crossing the narrow median into the opposing lanes of traffic, thereby eliminating head-on collisions.

On Highway 400 the structure over the C.N.R. was completed, eliminating the last level crossing on this highway between Toronto and Barrie.

The new structure over the Don Valley on Highway 401 immediately west of Yonge St. was well on its way to completion. This structure is the beginning of extensive work required to widen Highway 401 through Metropolitan Toronto in order to handle the very heavy traffic demand.

Construction is well under way on Highway 401 east of the Rouge River on structures and service roads required to eliminate all grade crossings. When completed, Highway 401 from Highway 25 to Oshawa will be completely controlled insofar as access is concerned.

Maintenance

In addition to normal maintenance, 27 miles of bituminous surface treatment was applied on sections of three highways — dusty or dirty chips were a problem, but saturating the stone in the truck boxes resulted in a very good catch on Highway 88. A new type of hot mix surface treatment was applied on sections of Highways 10 and 27. It proved this past winter to be an effective sealer. An additional 400 tons will be placed in 1961.

A new hydraulic auger mounted on the electrical crane truck, and a new portable compactor speeded up operations in which over 300 new hydro poles were installed, and over 60,000 lineal feet of cable buried.

Two zone striping crews and a "cross-check" crew were operating until the first week of December.

A new method of cleaning tile drains was used on Highway 2 west. A power operated cable auger proved capable of cleaning out tile drains plugged solid 700 feet long. The new "Imprest Stock" stock system worked very well and is highly appreciated by the district patrolmen.

The comparatively mild winter required less than normal effort for winter maintenance. The use of raw salt enabled us to keep all highways bare, at practically all times.



Credit River bridge widening on Queen Elizabeth Way (Toronto District).

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
11	C.N.R.	Simcoe County, Innisfil Twp.....	2
48	C.N.R.	North York County, Markham Twp.....	2
47	C.N.R.	North York County, Markham Twp.....	2
47	C.N.R.	North York County, Markham Twp.....	1
48	C.N.R.	Mt. Albert County, E. Gwillimbury Twp.....	1

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
Q.E.W.	Shook's Hill interchange.....	1.03	1959	.25	.78	13,077
400	Crown Hill interchange.....	.66	1959	.....	.66	3,611
Q.E.W.	Bronte, interchange.....	.53	1959	.....	.45	11,227
48	Markham to Ringwood.....	4.50	1959	.20	4.30	13,878
400	Innisfil Twp., C.N.R. overhead	.65	1960	.....	.65	9,000
Q.E.W.	Credit River bridge.....	.30	1959	.....	.30	.275
401	Liverpool Road interchange.....	.53	1959	.....	.53	2,434
11	Aurora, southerly.....	.89	1960	.....	.07	300
401	Downsview D.H.O.....	.....	1960	.....	.....	3,045
TOTALS.....		9.09	.....	.45	7.74	56,847

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
48	Markham to Ringwood.....	4.50	1,680
401	Ajax to Whitby.....	.42	9,328
401	Whitby to Oshawa.....	1.64	16,741
Q.E.W.	Hwy. 25 to Oakville.....	11.85	14,686
401	Woodbine Ave. to Kingston Road.....	9.42	28,725
49	From Hwy. 50 easterly, 2.93 mi.....	2.93	3,489
TOTALS.....		30.76	74,649

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
88	Hwy. 11 to Hwy. 27.....	6	18,264	864
11	Bradford northerly 7 mi.....	7	21,310	1,008
27	Kleinburg to Schomberg..... (includes 2 mi. of double treatment)	14	42,626	2,024
TOTALS.....		27	82,200	3,896

NOTE—Trial application of new type of hot mix surface treatment at various locations Hwys. 10 & 27. Mix used: 545 tons.

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Hoggs Hollow viaduct, west-bound lane.....	1959	1960	Reinforced concrete Steel trusses
Q.E.W.	Oakville Creek -- widening.....	1959	1960	Reinforced concrete arch
400	C.N.R. overhead, Innisfil.....	1959	1960	Reinforced concrete Rigid frame
Q.E.W.	Credit River -- widening.....	1959	1960	Reinforced concrete arch
401	Whitby-Pickering town line.....	1960	1960	Reinforced concrete Rigid frame
TOTAL.....		5		



Highway 401 interchange to Streetsville (Toronto District).

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
Q.E.W.	Bronte interchange.....	.53	1959	.08	.45	12,270
401	Liverpool Rd. interchange.....	.53	1960	....	.53	383
	TOTALS.....	1.06		.08	.98	12,653

Concrete Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Sq. yds. Placed 1960-61
Q.E.W.	Shook's Hill interchange*.....	1.03	1959	.78	.25	3,525

* Pavement width: 36 feet.

Crushed Gravel and Stone on Roads by Contract

		Total Miles 1960-61	Tons Placed 1960-61
Q.E.W.	Q.E.W. interchange, Shook's Hill.....	.25	29,536
400	Crown Hill interchange.....	.30	1,902
Q.E.W.	Q.E.W. Bronte Rd. interchange.....	.33	78,535
48	Markham to Ringwood.....	.81	99,055
401	Hogg's Hollow viaduct.....	.25	466
Q.E.W.	Oakville Creek.....	.27	7,847
400	Innisfil Township C.N.R. overhead.....	.65	46,623
401	Ajax to Whitby — resurfacing.....	.72	9,719
401	Whitby to Oshawa.....	.63	9,039
Q.E.W.	Credit River bridge.....	.30	1,927
401	Liverpool interchange.....	.53	9,584
50	Humber River bridge at Palgrave.....	.25	380
401	Whitby to Pickering.....	.21	17,235
401	401 & Moore Rd.....	.20	3,680
47	Hwy. 48 to Church St., Stouffville.....	1.87	12,797
401	South service road, Fairport to Liverpool Rd.....	1.15	4,356
11	Aurora southerly.....	.89	10,095
	D.H.O. Downsview.....	....	15,025
Q.E.W.	Hwy. 25 to Oakville.....	11.85	10,157
401	Woodbine Ave. to Kingston Rd.....	9.42	51,211
	TOTALS.....	30.88	419,169

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
	Various locations throughout the district by D.H.O.....		17,840

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
Q.E.W.	Q.E.W. interchange, Shook's Hill.....	1.03	1959	.78	.25
Q.E.W.	Q.E.W. & Bronte Rd. interchange.....	.53	1959	.....	.53
48	Markham to Ringwood.....	4.50	1959	3.69	.81
401	Liverpool interchange.....	.53	1960	.....	.53
	TOTALS.....	6.59		4.47	2.12

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61 A & B
Q.E.W.	Q.E.W. interchange					
	Shook's Hill.....	1.03	1959	.75	.28	24,181
400	Crown Hill interchange.....	.66	1959	.66	.....	1,028
Q.E.W.	Q.E.W. & Bronte Rd. interchange.....	.53	1959	.....	.53	77,909
48	Markham to Ringwood.....	4.50	1959	.....	.....	93,088
401	Liverpool interchange.....	.53	1959	.....	.....	9,053
47	Hwy. 48 to Church St., Stouffville.....	1.87	1960	.....	.....	12,797
11	Aurora southerly.....	.89	1960	.....	.....	15,025
	TOTALS.....	10.01		3.51	4.60	233,081

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
48	Baldwin.....	Salt & Storage	1960	1960
7 & 27	Intersection.....	Salt & Storage	1960	1960
7	Bayview.....	Salt & Storage	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Roads snowploughed and kept open, King's Highways.....	14	.....	762.91
Roadside picnic places maintained.....	2	.....	.....
Routine maintenance, King's Highways.....	.....	.....	762.91
Salt for de-icing roads (raw).....	.....	16,573	.....
Salt in sand, stockpiled.....	.....	6,030	.....
Sand for winter maintenance.....	.....	70,688	.....
Scale houses maintained.....	4	.....	.....
Seeding by department's forces.....(sq. yds.)	1,306,800	.....	.....
Shrubs received and planted this year.....	4,724	.....	.....
Signs erected or replaced.....	8,650	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	81
Traffic lights installed this year.....	8	.....	.....
Zone painting on King's Highways.....(gals.)	17,608	.....	762.91

DISTRICT No. 7—PORT HOPE**G. F. WETHERALL, P.Eng., District Engineer****Construction**

During the 1960-61 construction season a 17.7-mile section of Highway 401 from 1.7 miles west of Newcastle to Highway 28 at Port Hope was completed and opened to traffic.

The construction of this section of Highway 401 consisted of a granular base and hot mix asphalt surface.

Earth grading was also completed on the section from Highway 28 easterly to Highway 30, a distance of 27 miles. The structures were also completed and the contracts for the granular base and hot mix paving were called with the contractors completing approximately fifty per cent of their contract.

In the Peterborough area grading and paving was completed on an eight-mile section of Highway 7 Trans-Canada from Fowler's Corners southerly. The earth grading work on the Peterborough By-pass was completed, together with two railway overpasses and the structure over the Otonabee River.

The earth grading on the By-pass of the town of Cambridge on Highway 12 T.C.H. was completed, including the approach fills for the bridge over the Trent Canal.

Excellent progress was made on the earth grading and granular base on Highway 7A from Port Perry easterly, a distance of seven miles and the two causeways across Lake Scugog were completed prior to the end of the construction season.

Also on Highway 7A from Highway 35 easterly to Bethany the grading and asphalt paving was completed.

The three-mile section of Highway 45 from Highway 401 northerly to Baltimore was widened and resurfaced during the construction season.

In Prince Edward County 8.3 miles of asphalt pavement was laid from Rossmore to Crofton on Highway 14 and five miles of asphalt paving on Highway 33 from Bloomfield to Wellington. The paving work on Highway 33 also included considerable curb and gutter and sidewalk reconstruction in the villages of Bloomfield and Wellington.

Maintenance

Construction of a 10-bay patrol garage, started in late 1960 on Highway 401 at the Grafton interchange by the Department of Public Works, is expected to be completed during the summer of 1961.

One bulk storage salt shed was constructed by day labour forces. Construction of three additional salt sheds was started in mid-winter and completion is expected by early spring 1961.

Illumination of the Highway 115 interchange on Highway 401 was completed in early summer. In addition, limited lighting was installed at the Highway 28 interchange on Highway 401.

Illumination of one major intersection and one interchange was started in late winter and work is expected to be completed in early spring 1961.

The continued heavy construction program resulted in another year of extensive grass seeding and tree planting, with very good results.

The new heavy diesel engine trucks, with tandem drive axles, proved to be an excellent snowplough unit and were used to good advantage on winter maintenance operations.

A winter works program was carried out in the district on tree trimming, tree removal, and further development of roadside parks.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
45	C.N.R.	Northumberland County, Percy Twp.	Flash. lights

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Hwy. 115 easterly	5.43	1959	3.50	1.93	12,440
401	East end of Hwy. 2 interchange west	5.34	1959	2.50	2.84	27,311
401	Hwy. 2 to Hwy. 28 including Hwy. 28 interchange	2.00	1959	0.60	1.40	15,696
401	5 mi. east of Newcastle, easterly 5 miles	5.00	1959	3.00	2.00	19,419
401	Hwy. 28 to Hwy. 45	5.44	1960	.....	2.44	27,028
33	Wellington to Bloomfield	5.90	1960	.....	5.90	15,408
133 T.C.	Jacksons Creek to Hwy. 7	3.50	1960	.....	3.50	13,257
401	Hwy. 7 to Grafton interchange	7.70	1960	.....	base only	28,560
14	Rossmore to Crofton	8.33	1960	.....	8.33	31,033
7A	Hwy. 35 to Bethany	5.00	1960	.....	5.00	14,270
401	Grafton interchange to line between lots 29 & 30, Cramahe Twp.	6.85	1960	.....	base only	28,804
401	Lot line 29 & 30, Cramahe Twp. to Hwy. 30	6.90	1960	.....	base only	2,896
401	Interchange at Hwy. 45	2.00	1960	.....	1.90	14,870
	TOTALS	69.39		9.60	35.24	250,992

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
7A	Hwy. 115 to Bethany	6.7	17,837	588
7A	Hwy. 35 to Caesarea turn	9.8	26,119	861
36	Nogies Creek to 4 mi. west of Burleigh Falls	11.0	24,326	801.9
46	Junction secondary Hwy. 505 to Coboconk	5.0	10,784	355.5
45	Norwood to Hastings	5.0	12,789	421.58
45	Hastings south 3 mi.	3.0	7,673	252.95
45	Roseneath old Hwy. 45	1.0	2,558	84.31

Secondary Hwys.

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Tons Sand Used
503	5 mi. west of Kinmount to Norland	4.5	12,301	405.5
503	2 mi. west of Norland to Uphill	10.5	28,700	946.10
503	Sebright to 5 mi. north of Kirkfield	12.0	32,800	1,081.26
505	Victoria Rd. north 2 mi.	2.0	6,261	206.4
507	Hwy. 36, Cochranes Corners to Burnt River	9.5	27,607	910.05
	TOTALS	80.0	209,755	6,914.55



Highway 7 (T.C.H.) grading on Peterborough By-pass (Port Hope District).

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
14	Belleville city limits to old Hwy. 14 southerly 3.97 mi.	3.97	7,252.07
TOTALS		3.97	7,252.07

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
36	From 4.5 mi. west of junction Hwys. 28 and 36 to 8.5 mi. west.....	4.0	9,995	446.69
45	From 0.5 mi. south of Baltimore to 4.0 mi. north of Baltimore.....	4.5	10,987	491.00
46	From junction Hwys. 7 & 46 to Lorneville.....	8.0	26,643	1,190.70
121	From junction Hwys. 121 & 500 westerly....	1.0	2,776	124.06
500	From south of junction Hwys. 121 & 500 south	2.0	4,998	223.34
503	From 2 mi. west of Kinmount to 5.5 mi. west of Kinmount	3.5	8,785	392.57
45 (old)	From Roseneath north	1.0	2,441	109.10
TOTALS		24.0	66,625	2,977.46

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Hwy. 2 and 401 interchange.....	1958	1960	Con. rigid fr. slab & girder.
401	Gages Creek structure.....	1958	1960	40' barrel A. culvert
401	Hwy. 115 & 401 interchange.....	1958	1960	Prest. beam reinf. slab
401	Choate Rd. structure.....	1958	1960	Reinf. c. girder & slab
401	Ganaraska River bridge.....	1958	1960	Str. steel girder pres. slab
401	Haldimand Twp. bridge 17.....	1958	1960	Prest. b. reinf. sl.
401	1 mi. north of Port Hope.....	1959	1960	C. beam b. girder
401	1 mi. northwest of Cobourg.....	1959	1960	C. beam
401	3 mi. west of Grafton.....	1959	1960	Prest. b.
401	2 mi. west of Grafton.....	1959	1960	C. beam
	1 mi. northwest of Grafton road allow- ance between Lots 26 & 27.....		not op.	A. culvert
401	1 mi. north of Grafton.....	1959	1960	C. beam box girder
	1.5 mi. east of Wicklow.....		not op.	Conc. rigid frame
401	2.5 mi. east of Wicklow.....	1959	1960	Concrete rigid frame
401	1.5 mi. north of Colborne.....	1959	1960	M. concrete box girder
401	1 mi. east of Colborne.....	1959	1960	M. concrete box girder
401	1 mi. east of Salem Corner (Biddy Lake Rd.).....		not open to traffic	Concrete box girder
401	2 mi. north of Brighton.....	1959	1960	Concrete box girder
7A	Fleetwood Creek Bethany.....	1959	1960	Twin 20' x 11' r. f. box
	TOTAL — 16			

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
401	Hwy. 45 to 1.5 mi. east of Hamilton-Haldimand Twp. line.....	5.39	8,001
401	Morrish Rd. to Hwy. 28.....	0.05	142
401	1.5 mi. east of Haldimand-Vernonville Rd.....	5.17	1,641
401	Hwy. 28 to Hwy. 45.....	5.90	890
401	Road allowance between Lots 28 and 29, Hamilton Twp.....	.....	3,121
401	Vernonville Rd. to road allowance between Lots 22 and 23 Cramahe Twp.....	6.00	2,308
14	Rossmore to Crofton.....	4.83	117,768
401	Twp. road between Lots 20 and 21.....	0.32	2,231
401	East end of Hwy. 2 interchange to 5.34 mi. west.....	1.44	32,565
401	Hwy. 115 easterly 5.43 mi.....	.....	17,796
401	Hwy. 2 to Hwy. 28.....	0.24	21,066
401	5 mi. east of Newcastle easterly 5 mi.....	.....	13,870
401	Interchange at Hwy. 30.....	0.24	16,587
401	Interchange at Hwy. 45.....	1.9	66,000
401	Hwy. 28 to Hwy. 45.....	5.44	98,562
133 T.C.	Jacksons Creek to interchange Hwy. 7.....	3.50	6,079
33	Wellington to Bloomfield.....	5.9	12,934
401	Hwy. 45 to Grafton interchange.....	6.0	151,534
7A	Hwy. 35 to Bethany.....	5.0	5,688
401	Grafton interchange to line between Lots 29 and 30, Cramahe Twp.....	5.0	114,275
401	Lot line 29 and 30, Cramahe Twp. to Hwy. 30.....	3.9	51,605
7A	Port Perry to Caesarea corner.....	4.3	19,961
	TOTALS.....	70.52	764,624

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
7A	Nestleton to Jct. Hwy. 35.....	7	122.7
36	Nogies Creek to Burleigh Falls.....	24	1,068
45	Roseneath to Norwood.....	16	4,189.16
503	Norland to Kirkfield.....	41	5,727.75
505	Hwy. 46 to Uphill.....	12	23.75
507	Hwy. 36 northerly 18.5 mi.....	18.5	1,941
TOTALS		118.5	13,072.36

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
401	1.51 mi. east of Haldimand Twp. line to Vernonville Rd.....	5.17	1958	5.00	0.17
401	Road allowance between Lots 22 and 23, Cramahe Twp. to Hwy. 30.....	5.90	1958	5.80	0.10
7 T.C.	C.P.R. overhead, Peterborough By-pass....	0.81	1958	0.74	0.07
133 T.C.	Jacksons Creek to Hwy. 7.....	3.50	1959	3.30	0.20
14	Rossmore to Crofton	8.33	1959	7.55	0.78
7 T.C. & 115	Peterborough By-pass.....	6.20	1959	2.53	3.67
12 T.C.	Revision at Gamebridge.....	1.33	1959	1.10	0.23
401	Interchange at Hwy. 30.....	0.40	1959	0.16	0.24
401	Interchange at Hwy. 45.....	2.0	1960		1.5
7A	Port Perry easterly to Caesarea corner.....	7.5	1960		4.3
14	Bloomfield to Crofton	7.5			
45	Norwood southerly to 3 mi. south of Hastings.....	7.3			
TOTALS.....		55.94		26.18	11.26



Highway 401 west of Port Hope showing difference in elevation of the traffic lanes (Port Hope District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Hwy. 45 to 1.5 mi. east of Haldimand-Hamilton Twp. line..	5.39	1958	.....	5.39	27,330
7 T.C.	C.N.R. overhead, Peterborough By-pass.....	0.17	1958	.....	0.17	720
401	1.5 mi. east of Haldimand Twp. line to Vernonville Rd.....	5.17	1958	.....	5.17	29,025
401	Hwy. 28 to Hwy. 45.....	5.90	1958	.....	5.90	4,244
401	Road allowance between Lots 22 and 23, Cramahe Twp.....	5.09	1958	.....	5.09	751
401	Vernonville Rd. to road allowance between Lots 22 and 23, Cramahe Twp.....	6.00	1959	.....	6.00	2,308
133 T.C.	Jacksons Creek to Hwy. 7.....	3.50	1959	1.92	1.58	48,169
14	Rossmore to Crofton.....	8.33	1959	3.50	4.83	151,741
401	Road allowance between Hope and Hamilton Twp.....	0.23	1959	0.18	0.05	1,549
401	Road allowance between Lots 28 and 29, Hamilton Twp.....	.....	1959	.....	.....	16,550
7A	Jct. Hwys. 35 and 7A to Bethany.....	4.65	1959	4.10	0.55	50,056
7 T.C.	115 Peterborough By-pass.....	6.20	1959	.....	6.20	2,605
12 T.C.	Revision at Gamebridge.....	1.33	1959	.....	1.33	483
401	Road allowance between Lots 28 and 29, Cramahe Twp.....	0.33	1959	.....	0.33	10,364
401	East end of Hwy. 2 interchange westerly.....	5.34	1959	3.90	1.44	38,424
401	Hwy. 2 to Hwy. 28.....	2.00	1959	1.76	0.24	31,612
401	Interchange at Hwy. 30.....	0.40	1959	0.16	0.24	12,450
401	5 mi. east of Newcastle, easterly.....	5.0	1959	5.0	.....	24,810
401	Hwy. 115 easterly.....	5.43	1959	5.43	.....	35,186
401	Grafton interchange to line between Lots 29 and 30, Cramahe Twp.....	6.85	1960	.....	5.0	383,036
401	Hwy. 45 to Grafton inter.....	7.7	1960	.....	6.0	488,034
401	Hwy. 28 to Hwy. 45.....	5.44	1960	.....	5.44	457,583
33	Wellington to Bloomfield.....	5.9	1960	.....	5.9	36,975
7A	Hwy. 35 to Bethany.....	5.0	1960	.....	5.0	30,922
401	Interchange at Hwy. 45.....	2.0	1960	.....	1.9	250,590
401	Lot line 29 and 30, Cramahe Twp. to Hwy. 30.....	6.9	1960	.....	3.9	340,774
401	Twp. Rd. between Lots 20 & 21	0.32	1960	.....	0.32	15,524
7A	Port Perry to Caesarea corner..	7.50	1960	.....	4.3	79,770
TOTALS		118.07		25.95	82.27	2,571,585

Granular Base Where No Grading Done

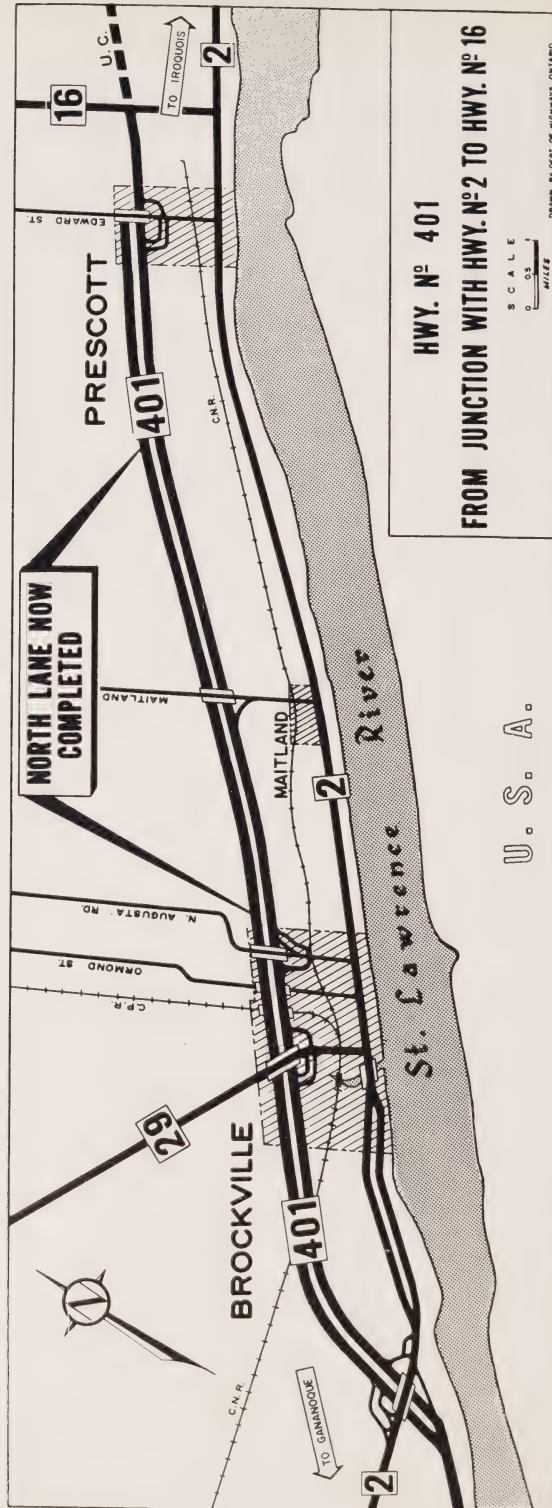
Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1960-61	Tons Placed 1960-61
14	Rossmore south on old Hwy. 14.....	3.50	1960	3.50	3,626

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Compl. 1960
401	Clarke-Darlington Twp. boundary	Salt shed	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		119.5	37
Calcium for de-icing roads.....		12	10
Off-road parks maintained.....	6		
Roads snowploughed and kept open, King's Highways.....	20		676.88
Roads snowploughed and kept open, secondary Highways.....	4		84.89
Roadside picnic places maintained.....	97		
Routine maintenance, King's Highways.....			676.88
Routine maintenance, secondary Highways.....			84.89
Salt for de-icing roads (raw).....		7,715.95	676.88
Salt in sand, stockpiled.....		3,500.00	
Sand for winter maintenance.....		70,362.03	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	2,681,360		
Shrubs received and planted this year.....	3,970		
Signs erected or replaced.....	3,950		
Snow fence erected, dismantled, stored.....			96.2
Weed control.....			244.8
Zone painting on King's Highways.....(gals.)	8,157		733.8
Zone painting on secondary Highways.....(gals.)	109		11.83



DISTRICT No. 8—KINGSTON**E. A. CASH, P.Eng., District Engineer****Construction**

During the past year a start was made on the structure and approaches on Highway 401 over the C.P.R. east of Prescott, and 17 miles of the north lane of Highway 401. The Brockville-Prescott By-pass was opened to traffic to complete this section of the highway after the south lane had been opened in 1959. The granular base and paving contract from Rockport easterly on Highway 401 was completed to join up with the above-mentioned section of Highway 401. The structure, paving and grading at the Highways 401 and 38 interchange was started, the grading finished and paving contract awarded from here westerly to Odessa, and grading was in progress on Highway 401 from Odessa westerly to west of Napanee. A pre-stressed structure and approaches were started at the intersection of the Shannonville Road and Highway 401. On the Cannifton-Corbyville By-pass, the grading, paving and structure over the C.P.R. were all completed.

At Stirling, where Highways 37 and 14 intersect, a grading, paving and drainage contract was completed, and a paving contract was completed on Highway 38 from Glenvale to Hartington, including curb, gutter and drainage at Harrowsmith and Hartington.

A new weigh scale site was completed at Glen Tay on Highway 7 west of Perth, and a new Trans-Canada grading contract for 9 miles was started from Sharbot Creek westerly.

The grading contract was completed and base paving done before winter on Highway 15 from Elgin to Morton, and a grading and culvert contract awarded from Morton to south of Seeleys Bay.

On Highway 32 north of Gananoque, the grading and structure over the Gananoque River was started. This work will eliminate bad curves and a narrow bridge.

A grading, paving, drainage, curb and gutter contract was started from the LaSalle Causeway to the intersection of Highways 2 and 15, including a revised entrance to Fort Henry.

The section of Highway 33 from Kingston to Collins Creek saw work started on grading, paving, curb and gutter, with cut sections made to accommodate a future undivided four-lane highway.

Small contracts were awarded for paving at Tweed, and intersection treatment at Highways 7 and 38, Highways 7 and 509, Highway 7 and the Lanark Road, Highway 2 and the Mallorytown Road and Highway 401 and the 1,000 Islands Bridge Road. In all, eight bridges were completed in 1960, and construction started on an additional seven. Of these fifteen bridges, all but two were on Highway 401.

Maintenance

The north (westbound lane) of the Brockville-Prescott section of Highway 401 was opened to traffic on completion of the major contracts as an addition to Patrol 22. Maintenance forces followed construction in all areas of the district, seeding and straw mulching the rights-of-way to prevent erosion with excellent results.

The experiments begun last year with soil sterilants in guide-rail have now been evaluated, and the indications are that this method of controlling vegetation in guide-rail will be feasible on a two- or three-year basis with minor improvements in the method of application.

A new patrol yard area was purchased near Madoc, adjacent to the proposed Madoc By-pass (Highway 7). It was rough graded and the placing of the granular base begun. Seven new standard salt sheds were constructed on a winter works basis, two at Madoc yard, three at Barriefield yard, and two at Crystal Beach, four miles west of Brockville. A new staff quarters, furnace room and washroom was constructed at Tweed patrol building, and a new heating system installed.

The district's maintenance forces again expanded the winter day labour program, widening two large rock cuts on Highway 509 south of Clarendon Station, and proceeding with the reconstruction of Highway 509 north of Clarendon Station. This work entails widening the travelled way by placing gravel and rock, the widening of rock cuts and multiple minor alignment changes. The program included the installation of two 11'10" x 7'7" multiplate culverts to replace an old timber structure. Several rock cuts were widened on Highway 38 from Sharbot Lake to Hartington and the rock was utilized to widen some of the narrower sections of the right-of-way. This work allowed the removal of some three miles of guide-rail.

Winter works on picnic sites included a continuation of the filling of low areas at the Arden picnic site, Highway 7, and a one hundred per cent expansion of the picnic park at the junction of Highways 7 and 37. This work made extensive use of the stone well method to save the many fine trees in the low area to which the park was extended. Two new pail-a-day toilets were constructed and placed in this park.

Crushed gravel stockpiles were placed at Barriefield, Westbrook, and Wolfe Island, for shouldering and surface treating during the coming season. Right-of-way was acquired on Wolfe Island on Highway 96, and 30 miles of fence was erected by the patrol crew and casual labour to enclose the new area.

One new tandem six-ton snowplough was supplied to allow standard tandem ploughing procedures on the four-lane section of Highway 401 at Brockville, and one used six-ton two-axle plough was transferred to the district to allow release of a 100 h.p. grader for winter ice removal on the same highway.

The zone painting crew was equipped with a new type paint truck with a hydraulically controlled paint buggy to allow the painting of four-lane highways from the left lane, and more efficient operation on two-lane highways. Since this machine cannot carry a supply of marker blocks and flags, a 1½-ton truck was supplied to place these markers as painting progressed.

Bituminous Hot Mix Pavement

Hwy No.	Location	Total Miles	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
401	Interchange Hwy. 2, easterly interchange Hwy. 29 (north lane).....	5.41	1959	5.41	837
401	Interchange, Hwy. 29 easterly to Maitland County Road (north lane).....	5.25	1959	5.25	9,900
401	Edward Street, Prescott, westerly to Maitland Road interchange (north lane).....	7.75	1959	7.75	6,530
401	Rockport easterly.....	13.10	1959	3.10	26,509
401	Shannonville Road interchange (detour)....	0.32	1960	.....	893
401	C.P.R. overhead bridge, Prescott (detour)...	0.57	1960	.....	935
401	C.N.R. subway, Hwy. 401, Richmond Twp. (detour).....	2.26	1960	.....	204
401	Interchange Hwy. 401 and 1,000 Island bridge.....	0.04	1960	0.04	137
401	Hwy. 401 and new Hwy. 38 interchange (detour).....	1.05	1960	.....	352
2	Barriefield to Gananoque.....	3.10	1960	3.10	10,464
2	New entrance to Fort Henry.....	0.59	1960	.....	.25
7 T.C.	Weight scales and approaches west of Perth.....	0.25	1960	0.25	1,118
7 T.C.	Interchange Hwys. 7 and 38.....	0.08	1960	0.08	76
15	Morton to Elgin.....	5.86	1960	Base only	8,772
33	Village of Stirling.....	0.66	1959	0.66	1,848
37	Hwy. 401 to Corbyville north.....	2.50	1960	2.50	7,451
38	Glenvale to Hartington.....	9.81	1960	9.81	24,700
	Development Road 416.....	0.59	1960	0.59	2,035
	TOTALS.....	59.19		38.54	102,761.25

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1960-61	Tons Placed 1960-61
401	Crystal Beach interchange to Thousand Island bridge road.....	15.50	15.50	8
2	Jct. of Hwy. 16 to Trenton east limits.....	112.00	112.00	109
7	Jct. of Hwy. 15 to Jct. of Hwy. 14.....	80.28	80.28	337
14	Jct. of Hwy. 401 to Jct. of Hwy. 7.....	26.63	26.63	220
15	Jct. of Hwy. 2 to Jct. of Hwy. 7.....	66.91	66.91	209
29	Brockville north limits to Smiths Falls south limits....	28.98	28.98	110
32	Gananoque to Hwy. 15.....	11.03	11.03	76
33	Kingston west limits to Jct. of Hwy. 14.....	45.68	45.68	655
37	Jct. of Hwy. 401 to Jct. of Hwy. 7.....	27.52	27.52	75
38	Cataraqui to Jct. of Hwy. 7.....	44.06	44.06	190
41	Napanee (Center Street) to Jct. of Hwy. 7.....	31.68	31.68	64
42	Jct. of Hwy. 29 to Westport south limits.....	32.68	32.68	158
95	Hornes Point to Jct. of Hwy. 96.....	7.19	7.19	10
96	Quebec Head to west end Con. 2.....	19.90	19.90	55

Secondary Road

502	Bridge Street, Napanee, to Jct. of Hwy. 2, Marysville..	8.54	8.54	6
509	Jct. of Hwy. 7 to Snow Road.....	12.06	12.06	73
	TOTALS.....	570.64	570.64	2,355

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
38	Hartington to Sharbot Lake (patching).....	29	500
2, 15	Barriefield to Gananoque.....	0.63	1,660
37	Village of Tweed (patching).....	0.43	160
37	Hwy. 401 to Corbyville (old road).....	2.5	5,304
2	Crystal Beach to Waterton (top only).....	4.5	7,129
	TOTALS.....	37.06	14,753

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Kingston Twp.....	1959	1960	Concrete tube-piling, reinforced concrete
401	Ernestown Twp.....	1959	1960	Reinforced concrete
37	Corbyville north of Belleville.....	1959	1960	Reinforced concrete arches
401	1 mi. northeast of Napanee, Fredricksburgh Twp.....	1960	1960	Rigid frame concrete, steel H-beam piling
401	Selby Creek bridge, Richmond Twp.....	1960	1960	Concrete, rigid frame, concrete on rock
401	County road to Newburgh.....	1960	1960	Concrete box beam, concrete on rock
401	Jct. of Hwy. 401 and Hwy. 41.....	1960	1960	Rigid frame
401	Shannonville Road and Hwy. 401.....	1960	1961	Prestressed box beam, concrete abutment

TOTAL — 8

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61
401	Edward Street, Prescott westerly to Maitland road.....	0.62	1959	.....	.62	3,614
401	Hwy. 401 interchange to Maitland County road.....	1.60	1959	.....	1.60	13,798
	TOTALS.....	2.22		.....	2.22	17,412

Concrete Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61	Pav. Width
401	Interchange Hwy. 2 easterly to inter. Hwy. 29 (nor. lane)	5.41	1959	5.41	.....	75,629	24'
401	Hwy. 401 interchange easterly to Maitland County road, (north lane).....	5.25	1959	5.25	.....	73,800	24'
401	Prescott westerly to Maitland road interchange (n. lane)..	7.75	1959	7.75	.....	109,400	24'
	TOTALS.....	18.41		18.41	.....	258,829	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
401	Interchange Hwy. 2 easterly to interchange Hwy. 29.....	5.49	18,547
401	Interchange Hwy. 29 easterly to Maitland County road.....	5.25	19,165
401	Edward Street, Prescott, westerly to Maitland road interchange.	7.75	36,022
401	Rockport easterly.....	13.10	22,022
401	Interchange, Hwys. 38 and 401.....	1.05	7,042
2	Barriefield to Gananoque.....	3.73	6,741
2	Crystal Beach to Waterton Village.....	12.00	4,242
7 T.C.	Weigh scales and approaches to west of Perth.....	.25	321
15	Morton to Elgin.....	5.86	20,388
33	Village of Stirling.....	.66	1,350
37	Village of Tweed.....	.43	930
37	Hwy. 401 to Corbyville road.....	6.60	8,145
38	Glenvale to Hartington.....	9.81	31,376
	TOTALS.....	71.98	176,291

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
401	Drummeyside road to Jct. of Hwy. 33	24.66	200
401	Crystal Beach interchange to Jct. of Hwy. 38	47.05	953
2	Crystal Beach interchange to Trenton east limits	94.81	2,505
7 T.C.	Jct. of Hwy. 15 to Jct. of Hwy. 14	80.28	4,704
14	Jct. of Hwy. 401 to Jct. of Hwy. 7	26.63	90
15	Jct. of Hwy. 2 to Jct. of Hwy. 7	66.97	3,796
29	Brockville north limits to Smiths Falls south limits	28.98	600
32	Gananoque to Jct. of Hwy. 15	11.03	1,400
33	Kingston west limits to Jct. of Hwy. 14	45.68	146
37	Jct. of Hwy. 401 to Jct. of Hwy. 7	27.52	924
38	Old Hwy. 38, Cataraqui to Kingston, Portland line	8.94	448
38	Jct. of Hwy. 2 to Jct. of Hwy. 401	1.88	40
42	Jct. of Hwy. 29 to Westport south limits	32.68	1,899
95	Hornes Point to Jct. of Hwy. 96	7.19	530
96	Quebec Head to west end Con. 2	19.90	1,910
708	Hwy. 401 to International boundary	1.35	99
Secondary Road			
509	Clarendon Station to Snow Road	5.84	6,160
TOTALS		531.39	26,404

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
401	C.N.R. subway at Napanee	1.60	1959	1.20	0.40
401	Hwy. 401 and Hwy. 38 interchange	1.05	1960	.....	0.50
401	Hwy. 401 at Shannonville road interchange	0.32	1960	.....	0.32
401	C.P.R. overhead, 1.75 mi. west of Hwy. 16	0.57	1960	.....	0.57
401	C.N.R. subway north of Napanee, road allowance between Lots 15 and 16, Rich- mond Twp.	2.26	1960	.....	2.00
401	County road to Newburgh, north of Napanee	0.46	1960	.....	0.20
401	Napanee River, easterly 4.9 mi.	4.90	1960	.....	0.90
401	Camden road interchange, easterly to Millhaven Creek	5.60	1960	.....	2.10
2	New entrance to Fort Henry	0.59	1960	.....	0.40
7 T.C.	Sharbot Creek, westerly 9.9 mi.	9.90	1960	.....	2.50
7	Weight scales, 4 mi. west of Perth	0.25	1960	.....	0.25
15	Morton to Elgin	5.50	1959	3.00	2.50
32	Gananoque River bridge, 2 mi. north of Gananoque	1.20	1960	.....	0.20
33	Collins Creek to Kingston	3.67	1960	.....	.....
37	Belleville to Corbyville	2.70	1959	1.85	0.85
38	Glenvale to Hartington	8.96	1959	7.20	1.76
TOTALS		49.53	.....	13.25	15.45

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Interchange Hwy. 2 easterly to interchange Hwy. 29 (shoulders).....	5.41	1959	5.41	.....	4,975
401	Interchange Hwy. 29 easterly to Maitland County road (shoulders).....	5.25	1959	5.25	.....	255
401	Edward Street, Prescott westerly to Maitland road interchange (shoulders).....	7.75	1959	7.75	.....	476
401	C.N.R. subway to Napanee.....	1.60	1960	.....	1.60	540
401	Shannonville road and 401 interchange.....	0.32	1960	.....	0.32	5,840
401	C.P.R. overhead bridge, 1.75 mi. west on Hwy. 16.....	0.57	1960	.....	0.20	5,670
401	C.N.R. subway, Hwy. 401 and Hwy. 41 interchange.....	2.26	1960	.....	0.26	747
401	Interchange, Hwy. 401 and Hwy. 38.....	1.05	1960	.....	.05	1,146
401	Hwy. 38 to Wilton Road, Odessa.....	6.92	1960	.....	3.52	41,937
2	Kingston to Gananoque.....	3.73	1959	0.25	3.48	18,071
7 T.C.	Weigh scales and approaches, 4 mi. west of Perth.....	.25	1960	.....	.25	2,412
15	Morton to Elgin.....	5.86	1960	.....	5.86	7,276
15	Morton to Elgin.....	5.50	1959	2.10	3.40	46,170
37	Belleville to Corbyville (shoulders).....	2.50	1959	2.50	.....	7,582
37	Belleville to Corbyville.....	2.69	1960	2.69	.....	8,885
38	Glenvale to Hartington.....	9.81	1960	.....	9.81	16,298
38	Glenvale to Hartington.....	8.96	1959	7.20	1.76	8,321
TOTALS.....		70.43		33.15	30.51	246,601

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
401	Rockport easterly.....	13.10	1959	10.00	3.10	191,331
2	Crystal Beach to Waterton.....	12.00	1959	7.50	4.50	5,243
TOTALS.....		25.10		17.50	7.60	196,574

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
2, 15	Middle road patrol yard.....	Salt sheds	1960	1960
37	Tweed patrol yard.....	Office, furnace room and bathroom	1960	1960
7 T.C.	New patrol yard, Madoc By-pass.....	Salt sheds	1960	1960
7 T.C.	Glen Tay.....	Weigh scales	1960	1960
401	New patrol yard, Long Beach.....	Salt sheds	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		1,036	94
Off-road parks maintained.....	15		
Roads snowploughed and kept open, King's Highways.....	14		638.46
Roads snowploughed and kept open, Secondary Highways.....	2		19.38
Roadside picnic places maintained.....	65		
Routine maintenance, King's Highways.....			638.46
Routine maintenance, Secondary Highways.....			19.38
Salt for de-icing roads (raw).....		8,342	657.84
Salt in sand, stockpiled.....		2,803	
Sand for winter maintenance.....		35,466	
Scale houses maintained.....	2		
Seeding by department's forces.....(sq. yds.)	2,037,640		
Shrubs received and planted this year.....	13,356		
Signs erected or replaced.....	2,884		
Snow fence erected, dismantled, stored.....			37
Weed control.....(gals.)	1,036		877
Zone painting on King's Highways.....(gals.)	11,393		730
Zone painting on Secondary Highways.....(gals.)	86		10
Zone painting on County Roads.....(gals.)	501		327

April 1, 1960 to March 31, 1961

FERRY "QUINTE"							FERRY "QUINTE LOYALIST"							TOTALS		
YEAR	MONTH	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	YEAR	MONTH	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
1960	April	26	435	3,790	251	4,041	1960	April	25	802	9,546	679	10,225	13,336	930	14,266
	May	31	617	5,494	308	5,802		May	31	822	11,892	10,974	12,986	17,386	1,402	18,788
	June	30	883	8,683	584	9,267		June	27	851	10,879	820	11,699	19,562	1,404	20,966
	July	31	941	12,619	422	13,041		July	31	1,098	21,118	1,090	22,208	33,737	1,512	35,249
	August	31	971	13,083	441	13,524		August	31	1,084	20,730	1,148	21,878	33,813	1,589	35,402
	September	30	849	7,731	440	8,171		September	30	973	12,561	1,052	13,613	20,292	1,492	21,784
	October	31	854	7,313	441	7,754		October	31	1,006	11,457	899	12,356	18,770	1,340	20,110
	November	30	780	4,874	377	5,251		November	30	939	8,171	723	8,894	13,045	1,100	14,145
	December	31	347	1,598	102	1,700		December	31	988	8,726	844	9,570	10,324	946	11,270
	January	26	260	1,116	66	1,182	1961	January	31	968	7,090	767	7,857	8,206	833	9,039
1961	February	.....	.....	.....	.....	.....		February	28	1,039	7,623	632	8,255	7,623	632	8,255
	March	31	220	726	39	765		March	31	1,029	9,906	900	10,806	10,632	939	11,571
	Totals	328	7,157	67,027	3,471	70,498		Totals	357	11,599	139,699	10,648	150,347	206,726	14,119	220,845

Ferry "Quinte" — Not operating April 2, 3, 4, 5, and 7 due to ice conditions. Not operating January 26, 27, 29, and 30 due to ice conditions. Not operating in February due to ice conditions.
 Ferry "Quinte Loyalist" — Not operating from April 26 to May 6 (motor being replaced).

Peak Traffic — "Quinte": August — 971 trips
 Peak Traffic — "Quinte": August

Trips	971
Cars	13,083
Trucks	441
TOTAL	13,524

Peak Traffic — "Loyalist": July — 1,098 trips
 Peak Traffic — "Loyalist": July

Trips	1,098
Cars	21,118
Trucks	1,090
TOTAL	22,208

Summary —
 Total days worked..... 328
 Total cars carried..... 67,027
 Total trucks carried..... 3,471
 Total trips..... 7,157

Summary —
 Total days worked..... 357
 Total cars carried..... 139,699
 Total trucks carried..... 10,648
 Total trips..... 11,599

DISTRICT No. 9—OTTAWA**L. E. WALKER, P.Eng., District Engineer****Construction****OTTAWA QUEENSWAY — Stage 1**

Granular and concrete pavement work was completed on Stage 1 of the four-lane divided Ottawa Queensway and opened to traffic on November 25, 1960. This involves a distance of 5.7 miles of Highway 17 T.C.H. Interchanges at St. Laurent Boulevard and the Montreal Road are now open to traffic. Minor trim work is required to complete this contract. Ottawa Queensway lighting has been completed. However, lighting of the Blair Road and Montreal Road interchange has not been commenced as yet.

Stage 2 — (Highway 15 to Carling Avenue, a distance of 4.5 miles)

The four grading and structure contracts in Stage 2 were completed in 1960. New structures open to traffic over the Queensway are at Highway 15, Pinecrest Road, Woodroffe Avenue and Maitland Avenue. A granular and concrete pavement contract was awarded for the complete length of Stage 2. Some 99% of the granular base was placed, while 43% of the concrete pavement was placed.

Stage 3 —

Two earth grading and structure contracts totalling 1.5 miles were awarded in mid-summer of 1960. Six structures are in various stages of completion. Concrete crib walls and retaining walls are being used extensively to keep right-of-way requirements to a minimum. Drainage and grading work are in the early stages. Relocation of underground utility facilities, such as water, sewage, hydro, telephone and gas mains, are presenting some problems, but must be expected in this type of urban construction.

HIGHWAY 16 —

Contract 60-168, Manotick By-pass, Highway 16, 11.38 miles in length, includes structure, grading, culverts and hot mix on the by-pass and resurfacing that portion of old Highway 16 which has been relocated. Work did not commence until October 1960. To date 40% of the earth grading has been completed and 26% of the sand cushion has been placed. The Jock River structure is 20% complete.

On Highway 34 from Alexandria to Lancaster the resurfacing top course was placed for a distance of 13.2 miles.

HIGHWAY 401 —

The interchange at Highway 16 was 57% completed. The grading and culverts on the east-bound lane from Highway 16 to the Iroquois Road was completed and granular base placed on 90%, or 10.07 miles of this grade.

Grading of the east-bound lane was completed from 1.3 miles east of St. Andrews Road at Cornwall to Summerstown County road, 7.3 miles. The Canadian Pacific Railway Overpass three miles north of Cornwall was 50% completed. The Canadian National Railway Overpass east of Cornwall and the Raisin River bridge at Lancaster were completed.



DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

MAP SHOWS THE FIRST COMPLETED STAGE OF THE CONTROLLED-ACCESS, DUAL-LANE OTTAWA QUEENSWAY, FROM HURDMAN'S BRIDGE TO ST. LAURENT BOULEVARD, AT THE EASTERN CITY LIMITS, AND A 4 1/2 MILE SECTION OF THE TRANS-CANADA HIGHWAY, BUILT TO THE SAME STANDARD, EXTENDING EASTWARD FROM ST. LAURENT BOULEVARD TO ONE-HALF MILE EAST OF GREEN'S CREEK. TOTAL MILEAGE OF THE QUEENSWAY AND TRANS-CANADA SECTIONS IS 5.7 MILES. EXPENDITURES IN EXCESS OF \$4,500,000 HAVE BEEN MADE IN THE CONSTRUCTION OF THE 5.7 MILES OF CONTROLLED-ACCESS, DUAL-LANE HIGHWAY, TO BE OFFICIALLY OPENED NOVEMBER 25, AT 1:30 P.M. THE QUEENSWAY ITSELF, A 10-MILE EXPRESSWAY THAT WILL BISECT OTTAWA, AT AN ESTIMATED COST OF \$35,000,000, AND SCHEDULED FOR COMPLETION IN 1965, IS BEING CONSTRUCTED UNDER AN AGREEMENT SIGNED BY THE GOVERNMENT OF CANADA, THE ONTARIO DEPARTMENT OF HIGHWAYS, THE CITY OF OTTAWA, AND THE NATIONAL CAPITAL COMMISSION. AT THE WESTERN END OF THE QUEENSWAY THE ONTARIO DEPT. OF HIGHWAYS WILL BUILD A SIMILAR SECTION OF FOUR LANE, CONTROLLED-ACCESS SECTION OF TRANS-CANADA HIGHWAY TO CONNECT WITH THE QUEENSWAY.

On Highway 15 T.C.H., the Carleton Place By-pass was paved over 2.74 miles and from Carleton Place to Innisville resurfaced, a distance of 8.03 miles, and 3.5 miles resurfaced on Highways 15 and 29 into Carleton Place.

On Highway 29 from Pakenham to junction of Highways 17 and 29 grading was completed. This section will be paved in 1961.

On Highway 17A from Meath southerly 5.5 miles to north of Cobden grading was completed and the structure at Shields Crossing on the Canadian Pacific Railway was completed and opened to traffic. The structure over the Snake River is 30% completed, and will be paved in 1961.

Maintenance

A new district office building was opened this year. The concrete, stone and brick split-level building provides 10,174 square feet of floor space.

The mobile radio system was expanded to a total of 29 sets and 6 executive sets in the district office. The system has proved invaluable in our operations.

Although the operations budget was reduced, a very extensive program was carried on to improve the shoulders throughout the district.

Three new patrol sites were purchased and development started. Also, five standard salt sheds were constructed by day labour forces. Day labour construction was started on Secondary Highway 508 and is progressing.

The district had about half the normal snowfall but encountered an unusual amount of freezing rain. A very extensive winter clearing operation was carried out on Highway 401. This helped alleviate the unemployment in the area, as 210 men were employed. About 305 acres were cleared from the Aultsville County road east to the east limit of Cornwall, a distance of 17.5 miles.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
Q'way	Carling Avenue interchange.....	.76	1958	....	.76	823.51
Q'way	Hare Ave. to west city limits....	2.20	1959	....	Detour	4,023.46
Q'way	Hare Avenue north.....	1.30	1959	....	Detour	2,148.50
Q'way	Part A — Rideau River to east city limits.....	1.30	1959	.16	1.14	32,100.00
17	Hwys. 15 and 17 interchange	0.8	1960	....	0.8	2,810.00
Q'way	Carling Avenue to Hwy. 15.....	....	1960	....	....	322.00
15 T.C.	Carleton Place By-pass.....	2.74	1960	....	2.74	10,772.36
Q'way	Carling Ave. east to Clarendon Ave.....	....	1960	....	Detour	527.00
Q'way	Clarendon Ave. east to Loretta Ave.....	....	1960	....	Detour	218.00
TOTALS.....		9.10		.16	5.44	53,744.83

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
17 Alt.	Chute-a-Blondeau to Hwy. 17.....	1.75	6,300	140

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
34	Lancaster to Alexandria.....	13.20	11,102.85
15 T.C.	Carleton Place to Innisville.....	8.03	18,352.72
29	Jct. of Hwys. 15 and 29 south.....	3.00	3,197.00
15	Resurfacing at Innisville.....	0.50	1,211.19
TOTALS.....		24.73	33,863.76

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
Q'way	Queensway, Maitland Avenue.....	1959	1960	Composite
Q'way	Queensway, Woodroffe Avenue.....	1959	1960	Composite
17	Hwys. 15 and 17 interchange.....	1959	1960	Composite
17	Overhead, C.P.R.....	1959	1960	Reinforced concrete
TOTAL — 4				

Concrete Pavement

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61	Pav. Width
Q'way	Rideau River east- erly to Jct., Hwy. 17 T.C., dual lane.	5.72	1959	.....	5.72	159,002	24'
Q'way	Hwys. 15 and 17 to Carling Ave. inter- change, dual lane..	4.20	1960	.....	2.10	57,002	24'
TOTALS.....		9.92		.....	7.82	216,004	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
Q'way	Hare Ave. west, city limits.....	1.79	22,450.37
Q'way	Hare Ave. northeast, 1.3 mi.....	.64	6,699.79
401	Cardinal to Iroquois.....	2.99	967.70
401	Hwy. 16 to Cardinal county road.....	.67	897.29
401	1.3 mi. east of St. Andrews to Summerstown county road.....	7.80	172.83
29	Pakenham to Jct. of Hwys. 17 and 29.....	5.94	52,816.88
Q'way	Rideau River to east city limits.....	.52	115,311
17 T.C.	East city limits to 0.6 mi. east of Greens Creek.....	4.3	164,000
17 T.C.	Interchange Hwys. 15 and 17.....	.55	9,056
17	Meath to Cobden.....	1.50	15,832
Q'way	Hwys. 15 and 17 interchange to Carling Ave. interchange.....	2.00	142,000
Q'way	Carling Ave. interchange to Clarendon Ave.....	Detours	65,000
Q'way	Clarendon Ave. to Loretta Ave.....	Detours	41,000
15	Carleton Place By-pass.....	14.00	19,460
401	Hwy. 16 interchange.....	0.30	7,000
TOTALS.....		43.00	662,663.86



Ottawa Queensway looking east from Alta Vista Drive (Ottawa District).

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
Q'way	Hare Ave. east, 1.3 mi.....	1.3	1959	1.2	0.1
401	13 mi. east of Cornwall.....	0.16	1958	0.09	.07
401	Cardinal to Iroquois.....	5.07	1958	3.39	1.68
401	Hwy. 16 to Cardinal county road.....	5.08	1958	4.68	.40
401	St. Andrews road to Summerstown county road.....	7.30	1958	5.87	1.43
29	Pakenham to Jct. of Hwys. 17 and 29.....	8.0	1959	4.0	4.0
17	C.P.R. overhead at Shields.....	0.91	1959	0.73	0.18
15 T.C.	Hwys. 15 and 17 interchange.....	0.80	1959	0.01	0.79
Q'way	Rideau River to east city limits.....	1.30	1959	.78	.52
17 T.C.	East city limits to 0.6 mi. east of Greens Creek.....	4.40	1959	.01	4.39
17	Meath to north of Cobden.....	5.5	1960	.....	5.5
Q'way	Carling Ave. interchange to Clarendon Ave.....	0.4	1960	.....	0.10
Q'way	Clarendon Ave. to Loretta Ave.....	1.08	1960	.....	0.30
16	Jock River bridge to Todd's Corners.....	5.30	1960	.....	2.50
TOTALS.....		46.60		20.76	21.96



Concrete paving on Highway 17 (T.C.H.) east end of Ottawa Queensway (Ottawa District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
Q'way	Hare Ave. to west city limits...	2.2	1959	1.2	1.0	37,643
Q'way	Hare Ave. northeast.....	1.3	1959	0.72	0.58	23,939
401	13 mi. east of Cornwall.....	0.16	1958	0.13	0.03	2,025
401	Cardinal to Iroquois.....	5.07	1958	2.08	2.99	14,263
401	Hwy. 16 to Cardinal county road.....	5.08	1958	0.03	5.05	1,457
401	St. Andrews Road, Summers- town county road.....	7.30	1958	4.30	3.00	15,147
401	Hwy. 16 to Iroquois.....	10.07	1960	.....	8.00	77,103
401	St. Andrews Road to 1 mi. west of Lancaster.....	14.4	1960	.....	0.50	26,985
29	Pakenham to Jct. of Hwys. 17 and 29.....	8.0	1959	6.25	1.75	92,242
Q'way	Rideau River to east city limits.	1.3	1959	0.87	0.43	148,187
17 T.C.	East city limits to 0.6 mi. east of Greens Creek.....	4.4	1959	0.15	4.25	260,861
Q'way	Jct. of Hwys. 15 and 17 to Carling Ave. interchange.....	4.2	1960	.....	2.1	270,745
17	Meath to north of Cobden.....	5.5	1960	.....	3.0	196,485
401	Hwy. 16 interchange.....	1.31	1960	.....	1.00	71,474
TOTALS.....		70.29		15.73	33.68	1,238,555

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Patrol yard, Cumberland.....	Patrol garage	1960	1960
17 T.C.	Patrol yard, Cumberland.....	Salt storage	1960	1960
17 T.C.	Hawkesbury patrol site.....	Salt storage	1960	1960
17 T.C.	Hawkesbury patrol site.....	Patrol garage	1960	1960
17 W	Cobden patrol site.....	Salt storage	1960	1960
	Ottawa District yard.....	District lab.	1959	1959
	Ottawa District office.....	District office	1960	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Off-road parks maintained.....	7	.....	.....
Roads snowploughed and kept open, King's Highways.....	.....	.....	664.3
Roads snowploughed and kept open, Secondary Highways.....	2	.....	43
Roadside picnic places maintained.....	20	.....	.....
Routine maintenance, King's Highways.....	.....	.....	664.3
Routine maintenance, Secondary Highways.....	.....	.....	43
Salt for de-icing roads (raw).....	.....	13,940	664
Salt in sand, stockpiled.....	.....	678	.....
Sand for winter maintenance.....	.....	14,240	.....
Scale houses maintained.....	1	.....	.....
Seeding by department's forces.....(sq. yds.)	977,680	.....	.....
Shrubs received and planted this year.....	1,690	.....	.....
Signs erected or replaced.....	3,576	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	19.91
Traffic lights installed this year.....	4	.....	.....
Zone painting on King's Highways.....(gals.)	10,060	.....	790
Zone painting on Secondary Highways.....(gals.)	115	.....	12

DISTRICT No. 10—BANCROFT**C. R. ROBERTSON, P.Eng., District Engineer****Construction**

Heavy spring floods washed out a 16-foot span concrete culvert on Highway 41, east of Griffiths, and caused a temporary closing of the road. The culvert was replaced under severe winter weather conditions by a larger twin box culvert.

The bridge over the Madawaska River at Combermere was opened to traffic, and this, together with the paving of over 10 miles of Highway 62 from Combermere to Barry's Bay, considerably enhanced the beauty of this tourist area.

Another paving contract was completed on Highway 41 from Kaladar to Northbrook, where extensive improvements were made. Very good progress was made on a grading and paving contract on sections of Highway 132 between Dacre and Renfrew, and it was possible to lay nine miles of H.L. 4 of base coat before closing down for the winter. A grading contract on Highway 60 between Wilno and Barry's Bay was completed well ahead of schedule.

On the grading contract south of Denbigh on Highway 41, which was begun last year, a considerable amount of work still remains to be done.



Madawaska River bridge on Highway 62 (Bancroft District).



Construction on Highway 41, south of Denbigh (Bancroft District).

Maintenance

Completed day labour projects include one mile of grading, drainage and granular base on Secondary Highway 504 west of Glen Alda and 0.7 miles of grading, drainage and granular base on Highway 62 immediately east of Papineau Creek. This latter project resulted in the elimination of two steep grades and the easing of a curve which had been a hazardous location especially during the winter. At McCoy Lake on Highway 127, 0.3 miles of completed grade was opened to traffic and a like distance was also opened to traffic on Secondary Highway 500 eight miles east of Bancroft. On Secondary Highway 515, near Palmer Rapids, an old one-lane wooden structure was replaced by a 72-inch diameter corrugated pipe and the roadbed was widened.

A large winter works program was carried out in the district which at peak employed over 375 men. This program embraced grading and drainage work as well as clearing, of which three miles of new line from Highway 60 south on Highway 127 deserves mention.

Patrol facilities were further improved with the construction of new salt sheds at Denbigh, Pembroke, Killaloe, Combermere and Ormsby.

Surface treatment was carried out on 26.5 miles of highway using a cationic emulsion for the first time on a large scale. The results with this new type of emulsion were most satisfactory.

Four new automatic signals were installed, two on Highway 62 and others on Highways 41 and 60.

During the year, 392.5 miles of zone painting were completed through this district.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
41	C.N.R.	Renfrew County, Wilberforce Twp.....	2 lights, 1 bell
60	C.N.R.	Renfrew County, Hagarty Twp.....	2 lights, 1 bell
62	C.N.R.	Hastings County, Madoc Twp.....	2 lights, 1 bell
62	C.N.R.	Renfrew County, Alice Twp.....	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
41	Jct. of Hwy. 7, Kaladar to North- brook.....	8.8	1960	.....	7.26	19,495.90
62	Combermere to Barry's Bay.....	10.88	1960	.....	10.57	28,044.74
132	Dacre to Shamrock.....	9.2	1960	.....	Base only	11,025.00
TOTALS.....		28.88		.....	17.83	58,565.64

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
28	Jct. of Hwys. 28 and 109 (deceleration lanes)..	0.16	.....	0.16	406.8
28	6 mi. north of Apsley.....	0.3	.....	0.3	480.0
62	1 mi. south of Steenburg.....	0.2	.....	0.2	320.0
TOTALS.....		0.66	.....	0.66	1,206.8

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
127	Whitney south.....	11.00	33,411	900.75
500	Bancroft to Hermon.....	14.50	31,377	1,195.65
504	North loop 3 mi. east of Apsley to Glen Alda and south loop, Apsley to Glen Alda.....	27.00	71,207	1,859.25
506	Hwy. 41 to Plevna.....	22.10	62,965	1,911.30
513	Dacre to Caldwell.....	9.30	21,492	665.10
517	Combermere to Carlow twp. road.....	9.90	25,197	650.55
523	Madawaska, Lyell, Wicklow twp. line.....	9.10	23,119	525.90
TOTALS.....		102.90	268,768	7,708.50

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
62	Combermere to Barry's Bay.....	0.31	575.40
41	2.65 mi. north of Kaladar.....	1.54	391.80
TOTALS.....		1.85	967.20

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
62	Madoc to Bannockburn, village of Bancroft, Jct. of Hwy. 28 for 5 mi. south.....	18.00	51,621	3,298.24
109	Jct. of Hwy. 28 for 3.5 mi. west.....	3.50	6,576	517.29
620	Coe Hill to Glen Alda.....	5.00	6,583	647.89
TOTALS.....		26.50	64,780	4,463.42

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
62	Madawaska River at Combermere.....	1959	1960	Concrete and steel girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
41	Kaladar to Northbrook.....	8.80	10,965.31
62	Combermere to Barry's Bay.....	10.88	33,657.05
132	Dacre to Renfrew.....	9.20	1,999.00
TOTALS.....		28.88	46,621.36

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
28	Jct. of Hwys. 28 and 109 (deceleration lanes).....	0.16	402.0
62	2 mi. north of Papineau Creek.....	0.80	1,686.0
500	8 mi. east of Bancroft.....	0.66	966.0
504	Glen Alda westerly.....	1.00	1,288.5
TOTALS.....		2.62	4,342.5

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61
41	Godin Creek at Griffith.....	0.28	1960	0.28
60	Barry's Bay to Wilno.....	5.89	1960	5.89
62	Madawaska River at Combermere.....	0.36	1959	0.36
62	Combermere to Barry's Bay.....	10.25	1959	10.25
62	2 mi. north of Papineau Creek.....	0.80	1960	0.80
132	Dacre to Renfrew.....	9.20	1960	9.20
500	8 mi. east of Bancroft.....	0.94	1960	0.28
504	Glen Alda westerly.....	1.70	1960	1.00
515	Combermere to Jewellville — various locations.....	0.30	1960	0.30
TOTALS.....		29.72		28.36

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
41	Kaladar to Northbrook.....	8.80	1960	8.80	9,505.27
	Denbigh to Kilpecker Creek.....	7.97	1959		23,222.78
60	Barry's Bay to Wilno.....	5.89	1960	5.89	49,320.00
62	Combermere to Barry's Bay.....	10.88	1959	10.88	87,162.43
132	Dacre to Renfrew.....	9.20	1960	9.20	223,246.00
	TOTALS.....	42.74		34.77	392,456.48

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
28	Apsley patrol No. 16.....	Salt shed	1959	1960
28	Bancroft patrol No. 13.....	Salt shed	1959	1960
41	Denbigh patrol No. 2.....	Salt shed	1960	1961
60	Killaloe patrol No. 5.....	Salt shed	1960	1961
62	Ormsby patrol No. 14.....	Salt shed	1960	1961
62	Pembroke patrol No. 6.....	Salt shed	1960	1961
62	Combermere patrol No. 11.....	Salt shed	1960	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Development roads built.....			15.6
Roads snowploughed and kept open, King's Highways.....	7		396.65
Roads snowploughed and kept open, Secondary Highways.....	10		180.19
Roadside picnic places maintained.....	26		
Routine maintenance, King's Highways.....			396.65
Routine maintenance, Secondary Highways.....			183.19
Salt for de-icing roads (raw).....		2,693.70	
Salt in sand, stockpiled.....		1,519.75	
Sand for winter maintenance.....		34,800	
Scale houses maintained.....	2		
Seeding by department's forces.....(sq. yds.)	561,440		
Shrubs received and planted this year.....	254		
Signs erected or replaced.....	2,858		
Snow fence erected, dismantled, stored.....			20.09
Weed control.....			27
Zone painting on King's Highways.....(gals.)	6,602.2		454.2
Zone painting on Secondary Highways.....(gals.)	649.0		33.5

DISTRICT No. 11—HUNTSVILLE**H. C. DERNIER, P.Eng., District Engineer****Construction**

No unusual problems were encountered in our construction work during the past year. Four contracts, started during the summer or fall, were of a nature which permitted winter work to be carried out to advantage. As a consequence construction work was continuous throughout the winter.

The widening of Highway 11 to 48 feet of pavement was completed from Crown Hill to the south end of the three-lane pavement north of Orillia. This work included the completion of a structure at the grade separation at the north intersection of Highways 11 and 11B which was started in 1959. Grading and paving of Highway 11 from the Perry-Armour township line through Burks Falls to the North Bay district boundary was started and will be completed this season. This project includes the construction of a new bridge over the Magnetawan River.

Grading work on Highway 69 T.C.H. from 10 miles south of Parry Sound to two miles north of Nobel including the Parry Sound By-pass was carried on throughout the winter and is expected to be completed in July or August 1961, with the exception of the structure over the Seguin River on the By-pass which may take longer due to the unusual design.

Grading on Highway 60 from the Algonquin Park West Gate to Smoke Creek, including a laminated creosoted wooden structure at Smoke Creek, was largely completed during the fall and winter. Paving was completed on Highway 400 from Highway 93 to Highway 12 as well as the Coldwater By-pass on Highway 12.

The newly built sections of Highways 109, 111 and 500 in the Bicroft area were also paved. The section of Highway 118, Bracebridge westerly, 4.5 miles, on which grading was completed early in the year was also paved.

A considerable mileage of grading by day labour forces was done in isolated sections throughout the district. In particular the section of Highway 109 from Secondary Highway 500 to Highway 111, 6.5 miles, was virtually completed during the winter and will be ready for cold mix paving early next summer. Use of this road will decrease appreciably the distance from Bancroft and Ottawa Valley points to the Lindsay and Toronto areas.

Maintenance

The Department purchased a sand screening plant enabling this district to screen and stockpile our winter sand by day labour. This operation as carried out by our own forces proved highly satisfactory, the cost compared favourably with the lowest contract price ever tendered in this district and stockpiling was completed by November 15.

All salt and sand for winter ice control was applied by day labour forces.

Work was carried out on five picnic or park sites in the district during the past winter.

The change in zone painting standards together with the change in speed limit, on some highways, from 50 to 60 miles per hour, necessitated the removal of a considerable amount of zone paint that had been applied under the old standards. This was removed mainly by the use of a sand blasting machine which proved to be quite efficient. This operation can be carried out at any temperature.

Severe frost action during the winter of 1959-60 resulted in extensive damage to some of our highways and secondary roads during the following spring break-up. The past winter season was the least severe of any for several years.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
12	C.N.R.	Simcoe County, Tay Twp.	2 flash. lights, 1 bell
520	C.N.R.	Parry Sound County, Perry Twp.	2 flash. lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Road allowance between Cons. 8 and 9, Oro Twp. to south Orillia By-pass interchange, (Hwy. 12 T.C.H.)	8.63	1959	.....	8.63	64,181.44
11	North Orillia entrance	3.42	1959	.....	3.42	19,871.55
12 T.C.	Coldwater By-pass	1.9	1959	.....	1.9	8,428.71
400	Coldwater south	11.9	1959	.....	11.9	26,210.58
118	Bracebridge westerly	4.46	1960	.....	4.46	12,352.71
111	Monck Lake northerly to Highland Grove	5.83	1960	.....	5.83	14,448.75
109	Bicroft westerly to Monck Lake	4.88	1960	.....	4.88	11,970.31
11	Huntsville By-pass	7.07	1959	.....	7.07	28,298.31
69 T.C.	Nobel to Pointe-au-Baril	18.34	1959	.....	18.34	66,263.00
11	5 mi. south of Burks Falls to 9.57 mi. northerly	9.57	1960	.....	.....	8,600.00
	TOTALS	76.00		.....	66.43	260,625.36

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl. 1960-61	Tons Placed 1960-61
35	7.5 mi. north of Dorset to 7.9 mi. north of Dorset	0.4	600
124	McKellar to 3.2 mi. easterly	3.2	5,280
124	Ahmie Harbour By-pass	3.8	6,270
500	Irondale By-pass	3.6	5,400
532	Vicinity of Falkenburg	0.8	1,200
559	Carling turn to Shawanaga	8.3	12,450
	TOTALS	20.1	31,200

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
69	1.5 mi. north of Pointe-au-Baril to Jct. of Hwy. 529.....	4.3	9,212	312
111	West Jct. of Hwys. 109 and 111 to Dyno Mines.....	3.1	8,525	225
124	McKellar to Jct. of Sec. Hwy. 510.....	21.3	60,025	1,626
501	Jct. of Hwy. 103 to Honey Harbour.....	8.8	24,465	684
514	Jct. of Hwy. 60 to Interlaken.....	10.0	26,203	825
518	Hwy. 69 to Orrville.....	12.0	34,917	878
519	Eagle Lake to Redstone Lake.....	4.1	6,700	284
519	1.5 mi. south of Haliburton to Hwy. 121.....	19.4	56,836	1,446
520	Dunchurch to Ardbeg.....	16.5	40,750	1,146
520	Magnetawan to Jct. of Hwys. 124 and 520.....	1.9	5,382	150
530	Hwy. 35 to Jct. of Sec. Hwy. 519.....	12.0	35,160	844
532	2 mi. west of Rosseau westerly.....	3.6	10,357	330
	TOTALS.....	117.0	320,532	8,750

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
520	Various locations from Burks Falls to Magnetawan.....	1.5	2,250

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
18	Hwy. 11 to Baysville.....	12.0	29,451	1,560.63
300	Wilberforce to Highland Grove.....	9.0	20,460	1,015.77
520	Magnetawan to Burks Falls.....	15.0	39,293	2,121.30
	TOTALS.....	36.0	89,204	4,697.70

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
12	T.C. Coldwater River (Coldwater By-pass)....	1959	1960	Structural steel and reinforced concrete
11	North Orillia entrance.....	1959	1960	Reinforced concrete
	TOTAL — 2			

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
24	McKellar to 2.0 mi. east of Ahmic Harbour.....	20.0	30,932
18	Sprucedale to Hwy. 69.....	33.0	14,989
19	Haliburton to Jct. of Hwy. 121.....	20.0	9,995
32	2.0 mi. west of Rosseau to 7.5 mi. west of Rosseau.....	5.5	20,947
	TOTALS.....	78.5	76,863

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	Crown Hill to 4.0 mi. north of Burks Falls.....	104.7	* 653
12 T.C.	Atherley Narrows to Midland.....	35.2	* 176
35	Jct. Hwy. 11 (Huntsville) to Haliburton-Victoria boundary.....	75.0	350
60	Hwy. 35 to Algonquin Park H.Q.....	28.4	* 227
69 T.C.	Jct. Hwy. 11 (Gravenhurst) to 1.5 mi. north of Pointe-au-Baril...	84.9	174
103 T.C.	Jct. Hwy. 12 (Waubaushe) to Jct. Hwy. 69 (Footes Bay).....	31.4	* 304
109	East Jct. of Hwys. 109 and 111 to Cardiff.....	4.9	86
111	Jct. of Hwy. 111 and Sec. Hwy. 500 to Dyno Mines.....	7.6	112
118	Jct. of Hwy. 35 (Dorset) to Jct. of Hwy. 69 (Glen Orchard).....	55.6	* 367
121	Kinmount to Tory Hill.....	42.0	367
124	Jct. of Hwy. 69 to Jct. of Hwy. 510 (Magnetawan).....	39.2	4,265
400	Craighurst to Coldwater.....	12.4	* 12
500	Kinmount to Hastings County boundary.....	51.1	227
501	Jct. of Hwy. 103 to Honey Harbour.....	9.2	3,672
503	Kinmount to Norland.....	10.0	10
514	Jct. of Hwy. 35 to Interlaken.....	10.0	3,526
516	Jct. of Hwy. 11 to Windermere.....	15.7	159
518	Hwy. 69 to Kearney.....	46.0	2,176
519	Redstone Lake to Hwy. 121.....	33.6	1,842
520	Hwy. 11 (Burks Falls) to Ardbeg.....	33.7	1,884
525	Gravenhurst to Gravenhurst sanatorium.....	1.7	10
527	Huntsville to Baysville.....	16.7	111
529	1.5 mi. north of Pointe-au-Baril to Bayfield Inlet.....	7.1	74
530	Carnarvon to Sec. Hwy. 519.....	12.0	2,614
532	Jct. of Hwy. 69 to Jct. of Hwy. 11.....	43.2	1,236
559	South Jct. of Hwy. 69 to north Jct. of Hwy. 69 (Shawanaga River)...	13.5	86
592	Novar to Emsdale.....	9.8	20
TOTALS.....		834.6	24,740

* Gravel used for shoulders.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
11	Road allowance between Cons. 8 and 9, Oro Twp. to south Orillia By-pass inter- change (Hwy. 12 T.C.H.).....	8.63	1959	5.19	3.44
11	North Orillia entrance.....	3.42	1959	0.85	2.57
11	5 mi. south of Burks Falls to 9.57 mi. northerly.....	9.57	1960	.....	8.13
12 T.C.	Coldwater By-pass.....	1.6	1959	.....	1.60
60	Algonquin Park gates to 7.88 mi. easterly....	7.88	1961	.....	1.89
69 T.C.	Parry Sound By-pass.....	3.46	1960	.....	1.73
69 T.C.	Hayes Corners to Parry Sound By-pass....	10.2	1960	.....	5.00
69 T.C.	North end of Parry Sound By-pass to 2 mi. north of Nobel.....	5.88	1960	.....	4.70
109	Sec. Hwy. 500 to Hwy. 111.....	6.5	1958	4.0	2.25
118	Bracebridge westerly.....	4.46	1959	1.38	3.08
124	3.2 mi. north of McKellar to 4.5 mi. north of McKellar.....	1.3	1960	.....	1.0
503	Norland easterly.....	0.6	1960	.....	0.6
518	7.4 mi. east of Hwy. 69 to 8.4 mi. east of Hwy. 69.....	12.0	1955	5.5	1.0
532	2.4 mi. west of Rosseau to 4.2 mi. west of Rosseau.....	1.8	1960	.....	1.5
532	4.2 mi. north of Bracebridge to 4.6 mi. north of Bracebridge.....	0.4	1960	.....	0.3
532	3.25 mi. north of Bracebridge to 4.05 mi. north of Bracebridge.....	0.8	1960	.....	0.8
TOTALS.....		78.50		16.92	39.59



Highway 12—Coldwater By-pass (Huntsville District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	5 mi. south of Burks Falls to 9.57 mi. northerly.....	9.57	1960	.....	8.13	397,873
12 T.C.	Coldwater By-pass.....	1.9	1959	.....	1.9	80,225
69 T.C.	Nobel to Pointe-au-Baril.....	18.34	1959	11.00	7.34	21,748
69 T.C.	North end, of Parry Sound By- pass to 2 mi. north of Nobel..	5.88	1960	.....	4.70	190,233
69 T.C.	Parry Sound By-pass.....	3.46	1960	.....	.....	48
69 T.C.	Hayes Corners to Parry Sound By-pass.....	10.2	1960	.....	5.0	47,224
109	Sec. Hwy. 500 to Hwy. 111.....	6.5	1958	4.0	2.25	25,748
118	Bracebridge westerly.....	4.46	1959	3.57	4.46	88,513
124	McKellar to 3.2 mi. northerly..	3.2	1960	.....	3.2	19,800
124	Ahmie Harbour diversion.....	3.0	1960	.....	3.0	10,000
124	3.2 mi. north of McKellar to 4.5 mi. north of McKellar....	1.3	1960	.....	1.0	1,866
400	Coldwater southerly.....	11.9	1959	.....	11.9	31,333
518	7.4 mi. east of Hwy. 69 to 8.4 mi. east of Hwy. 69.....	12.0	1955	5.5	1.0	7,600
532	2.4 mi. west of Rosseau to 4.2 mi. west of Rosseau.....	1.8	1960	.....	1.5	23,893
	TOTALS	93.51		24.07	55.38	946,104

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Road allowance between Cons. 8 and 9, Oro Twp. to south Orillia By-pass interchange..	8.63	1959	5.18	3.45	156,801.63
11	North Orillia entrance.....	3.42	1960	.....	3.42	146,749.25
	TOTALS.....	12.05		5.18	6.87	303,550.88

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	Emsdale, Twp. of Perry.....	Equipment storage	1960	1960
69	Parry Sound, Twp. of Foley.....	Equipment storage	1961	1961
121	Tory Hill, Twp. of Monmouth.....	Equipment storage	1960	1960
124	Dunchurch, Twp. of Croft.....	Equipment storage	1960	1960
532	Bracebridge, Twp. of Monck.....	Equipment storage	1961	1961



Rock drilling operation on Highway 69 (T.C.H.)—1 mile north of Parry Sound (Huntsville District).

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		27	
Calcium for de-icing roads.....		20	
Off-road parks maintained.....	11		
Roads snowploughed and kept open, King's Highways.....			590.6
Roads snowploughed and kept open, Secondary Highways.....			293.5
Roadside picnic places maintained.....	47		
Routine maintenance, King's Highways.....			590.6
Routine maintenance, Secondary Highways.....			293.5
Salt for de-icing roads (raw).....		8,153	
Salt in sand, stockpiled.....		2,799	
Sand for winter maintenance.....		83,885	
Scale houses maintained.....	3		
Seeding by department's forces.....(sq. yds.)	2,261,450		
Shrubs received and planted this year.....	1,224		
Signs erected or replaced.....	7,512		
Snow fence erected, dismantled, stored.....			71.0
Zone painting on King's Highways.....(gals.)	9,648		524.8
Zone painting on Secondary Highways.....(gals.)	2,572		148.5

Supplementary Preliminary Work

Hwy. No.	Location	Miles in Project	Work Begun
121	Kinmount to Minden — Approx. 2 mi. of rock cut, widening and ditching.....	10.0	1960
124	Sec. Hwy. 510 to Sec. Hwy. 520 — Clearing, grubbing, fencing, stripping rock cuts and topsoil on earth cuts preliminary to grading.....	4.0	1960
514	Hwy. 60 to Interlaken — Approx. 6 mi. of clearing, grubbing and ditching.....	10.0	1960
519	Lochlin to Hwy. 121 — Preliminary work done for 1.2 mi.....	6.0	1960
532	Bracebridge north limits to 3.2 mi. north — Clearing, grubbing, and fencing partially completed.....	3.2	1960
	TOTAL.....	33.2	

DISTRICT No. 13—NORTH BAY**J. D. FOSTER, P.Eng., District Engineer****Construction**

A grading, granular base and hot mix contract was completed on Highway 11 from the north limits of Sundridge to 8 miles south.

Hot mix paving on Highway 11 from the north end of the Callander By-pass to the west end of the North Bay By-pass was completed.

On Highway 11 from 1 mile south of Trout Creek to 2 miles north of Powassan, paving was completed. The contract included installation of storm sewers, curb and gutters, and hot mix paving on Main and Clarke Streets in Powassan, and granular base and paving on three sections of Highway 11B in Powassan.

Grading, granular base and hot mix paving on Highway 17 from Highway 94 to Secondary Highway 531, extending 8 miles, were completed. The work included a structure over the Kaibuskong River.

Highway 17 from Chalk River to Deep River was completed with hot mix paving.

On Highway 17, 16 miles west of North Bay, a 3000-foot test section of reinforced hot mix paving was completed.

The following work was done by day labour: The Lavigne Causeway on Highway 64 was widened and grading and granular base were commenced from Noelville south for four miles on Highway 64.

Grading and culvert construction from Highway 11 west for $\frac{1}{2}$ mile on Highway 124 was carried out.

On Secondary Highway 534 from Highway 11, two miles westerly, and on two miles in the vicinity of Christian Valley, granular base was laid. Two sharp curves were eliminated in the Christian Valley area.

Granular base was laid for 4.2 miles west of Commanda on Secondary Highway 522.

Clearing was done on Secondary Highway 534 from Nipissing Village west for seven miles.

Grubbing was completed on Highway 11 from Sundridge north for 13 miles.

Maintenance

Normal maintenance was carried out on all highways throughout the district. Some concern was caused by serious flooding in the Lake Nipissing and French River areas, and Highway 64 was closed to traffic at Lavigne and Field during May. Bridges along Sturgeon River were seriously threatened by a log jam, due to high water, but no serious damage was done.

In addition to winter maintenance, the following day labour projects were carried out by maintenance forces:

Five miles of mulch paving and 11 miles of surface treatment were completed. The structure across Boom Creek in Mattawa was completed and opened to traffic. Bailey bridges were replaced by multiplate culverts on Highway 63 east of North Bay and on Secondary Highway 539 west of Field.

Eroded banks of the Sturgeon River, seriously threatening Highway 64 and Secondary Highway 539, were corrected by rock embankments carried on as a winter project. Considerable clearing of right-of-way was carried out as a winter employment relief project, and work was carried out on picnic sites with three new parks being made available to the public.

The district screening plant crew screened and stockpiled approximately 45,000 cubic yards of sand for winter road maintenance. District boundaries were increased by the transfer of the section of Highway 11, between Temagami and Latchford, from New Liskeard district.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
539	C.N.R.	Nipissing County, Gibbons Twp.....	X

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	8 mi. south of Sundridge to 1 mi. north of Sundridge.....	9.07	1960	.....	9.07	36,061
11	1 mi. south of Trout Creek to 2.5 mi. north of Powassan.....	11.24	1960	.....	11.24	51,201
11	2.5 mi. north of Powassan, Hwy. 17B.....	21.25	1959	14.75	6.50	29,079
11B	North Bay south limits for 3.1 mi. south.....	3.10	1960	.....	3.10	3,042
17 T.C.	Chalk River to Deep River.....	6.21	1959	.....	6.21	10,863
17 T.C.	Jct. of Hwy. 531 to Jct. of Hwy. 94.....	8.03	1960	.....	8.03	22,967
17 T.C.	15 mi. west of North Bay for .64 mi. west*.....	.64	1960	.....	.64	2,088
	TOTALS.....	59.54		14.75	44.79	155,301

* Experimental paving.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	13 mi. east of Mattawa for .25 mi.....	.25	.25	500
17 T.C.	1.5 mi. west of Bonfield Corners westerly.....	.50	.50	1,000
124	1 mi. west of Hwy. 11 to 2.2 mi. west.....	1.20	1.20	1,980
535	St. Charles northerly.....	3.40	3.40	5,610
	TOTALS.....	5.35	5.35	9,090

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
64	Jct. of Hwy. 539 to 2.6 mi. south.....	2.6	8,150	486
124	Jct. of Hwy. 510 to 8.5 mi. east.....	8.5	24,051	1,383
	TOTALS.....	11.1	32,201	1,869

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	3.5 mi. south of Sundridge.....	1959	1960	Rigid frame
17 T.C.	Bonfield.....	1959	1960	Structural steel girder
TOTAL — 2				

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles in Job	Work Begun	Miles Compl. 1960-61	Sq. Yds. Placed 1960-61	Pav. Width
17 T.C.	Meadowside: Experimental paving laid over old concrete, additional 4 feet widening.....	.64	1960	.64	9,064	24'

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	8 mi. south of Sundridge to 1 mi. north of Sundridge.....	9.07	170,300
11	1 mi. south of Trout Creek, Hwy. 17B.....	32.49	136,946
11	North Bay yard.....		5,000
17	Bonfield Corners to Jct. of Sec. Hwy. 531.....	8.20	103,105
17	Deep River to Chalk River.....	6.21	72,865
17	Meadowside.....	.64	2,002
64	Noelville vicinity, various locations.....		19,800
124	1 mi. west of Hwy. 11.....		7,500
522	Trout Creek to Jct. of Hwy. 524.....	17.00	16,500
528	Jct. of Hwy. 64 to Wolseley Bay.....	11.00	6,000
533	1 mi. south of Hwy. 63 southerly.....		10,000
534	13 mi. west of Powassan.....		22,000
535	Veuve River to Noelville, various locations.....	17.00	29,000
539	Field to Warren.....	10.00	16,000
607	Jct. of Hwy. 64 to French River.....	8.00	3,200
TOTALS.....		119.61	620,218



Grading on Highway 11—5 miles south of Sundridge (North Bay District).

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	4 mi. north of Burks Falls to Latchford.....	131	5,598
17 T.C.	Pembroke to Hagar.....	179	1,248
63	North Bay to Temiskaming.....	40	579
64	Rutter to Marten River.....	85	18,130
124-510	Hwy. 11 to Magnetawan.....	15	270
522	Trout Creek to Loring.....	38	2,961
528	Hwy. 64 to Wolseley Bay.....	11	7,398
533	Mattawa to Hwy. 63.....	34	622
534	Powassan to Restoule.....	23	5,314
535	Veuve River to Noelville.....	31	5,280
539	Warren to Field.....	26	6,972
607	Hwy. 64 to French River.....	8	11,667
TOTALS.....		621	66,039

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
11	8 mi. south of Sundridge to 1 mi. north of Sundridge.....	9.00	1959	.....	9.00
17	Hwy. 94 to Sec. Hwy. 531.....	8.20	1959	6.10	2.10
17	Deep River to Point Alexander.....	4.24	1960	.....	.....
17	Mattawa to Boom Creek.....	.10	1959	.....	.10
63	Lee Creek.....	.30	1960	.....	.30
533	10 mi. south of Hwy. 63.....	.20	1961	.....	.20
539	1 mi. west of Field (culvert and approaches).....	.10	1961	.....	.10
TOTAL.....		22.14		6.10	11.80

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	8 mi. south of Sundridge to 1 mi. north of Sundridge.....	9.00	1960	.....	9.00	457,334
17	Hwy. 94 to Sec. Hwy. 531.....	8.20	1959	6.10	7.90	190,163
64	Lavigne causeway.....	.25	1961	.....	.25	33,507
64	Noelville southerly.....	3.00	1960	.....	.....	64,272
124	Hwy. 11 to 3 mi. west.....	1.75	1959	1.00	.....	30,478
534	Powassan westerly.....	3.00	1960	.....	3.00	34,398
535	1.5 mi. south of Hagar for 1.5 mi.....	1.50	1961	.....	.....	11,894
TOTALS.....		26.70		7.10	20.15	822,046

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	1 mi. south of Trout Creek to 2 mi. north of Powassan.....	11.24	1960	.....	11.24	201,946
17	Mattawa to Boom Creek.....	.10	1959	.....	.10	5,120
522	Commanda west for 4.2 mi.....	4.20	1961	.....	4.20	29,754
539	7 mi. west of Field.....	.20	1960	.....	.20	3,700
TOTALS.....		15.74		.....	15.74	240,520

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	1,283.4	66.64
Off-road parks maintained.....	12	.....	.....
Roads snowploughed and kept open, King's Highways.....	7	.....	479
Roads snowploughed and kept open, Secondary Highways.....	11	.....	183
Roadside picnic places maintained.....	22	.....	.....
Routine maintenance, King's Highways.....	.....	.....	479
Routine maintenance, Secondary Highways.....	.....	.....	183
Salt for de-icing roads (raw).....	.....	6,755	525
Salt in sand, stockpiled.....	.....	2,428	.....
Sand for winter maintenance.....	.....	59,500	.....
Scale houses maintained.....	4	.....	.....
Seeding by department's forces.....(sq. yds.)	710,028	.....	.....
Signs erected or replaced.....	5,030	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	49.7
Zone painting on King's Highways.....(gals.)	7,890	.....	477.8
Zone painting on Secondary Highways.....(gals.)	220	.....	13.6

DISTRICT No. 14—NEW LISKEARD**R. S. CHAPMAN, P.Eng., District Engineer****Construction**

Paving was completed on Highway 11 from New Liskeard to Earlton and from Montieth to Porquis Junction. The berm at the Earlton overhead was completed and work was started on the bridge itself. The concrete columns were all built and 54 prestressed concrete beams were fabricated in the contractor's yard at Kirkland Lake. These will be transported to the bridge site early in 1961.

The main street in the town of Kirkland Lake was completely rebuilt and paved and Highway 66 was completely paved 17 miles east of the town.

Two bridges on Highway 65 over the Blanche River and Wright Creek were opened to traffic late in 1960 although a small amount of work remains to be done on this contract in 1961.

The Montreal River bridge at Latchford on Highway 11 was completed and opened to traffic this year and work was begun on the Black River bridge in the town of Matheson and the Driftwood River bridge on Secondary Highway 577 near Shillington.



Montreal River bridge on Highway 11 at Latchford (New Liskeard District).

Work continued this year on the Resources Road from Foleyet to Chapleau. The bridge over the Ivanhoe River at Foleyet was completed and opened to traffic shortly after the old bridge was washed out by the spring flood which damaged the town of Foleyet very severely. Another equipment rental contract was let in July and the road was completed to 20 miles west of Foleyet before closing down for the winter.

Maintenance

Severe floods caused by the heavy rains in early May coming on top of the spring break-up caused heavy damage to our gravel roads. At one time eight highways were closed to traffic. This resulted in a heavy gravel patching program which commenced in late summer and continued until late fall.

In May the district took over the former development road between Englehart and Larder Lake. This road was designated as Secondary Highway 624. The district also assumed maintenance of 12 miles of the resources road between Foleyet and Chapleau.

During the year district forces carried out a successful mulch surfacing program, and added 24 miles to our total of paved surface.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
11	O.N.R.	Cochrane County, Clergue Twp.....	X
67	O.N.R.	Cochrane County, Calvert Twp.....	X

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Approximately ½ mi. north of Porquis Junction southerly.....	8.01	1960	.....	8.01	22,779
11	New Liskeard to Earleton including town of Earleton.....	19.32	1959	4.2	15.12	29,465
11	Montreal River bridge at Latchford.....	.35	1960	.....	.35	1,817
11, 65	Town of New Liskeard.....	0.98	1960	.....	0.98	4,270
66	Twp. of Teck (town of Kirkland Lake).....	1.08	1960	.....	1.08	7,180
66	Kirkland Lake easterly 8.6 mi.....	8.6	1959	3.25	5.35	12,561
66	8.5 mi. east of Kirkland Lake to west of Larder Lake.....	6.06	1960	.....	6.06	14,960
TOTALS.....		44.40		7.45	36.95	93,032

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
65	27 mi. west of New Liskeard to Elk Lake.....	15.50	.....	15.50	23,500
572	Hwy. 11 to Holtvre townsite.....	5	.....	5	7,500
560	O'Brien Road to Gowganda.....	3	.....	3	4,500
TOTALS.....		23.50	.....	23.50	35,500

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
65	Intersection of Sec. Hwy. 572 westerly.....	8	24,000	1,100
101	2 mi. east of Warren Lake westerly.....	5.5	16,900	770
629	Throughout.....	6.6	20,900	910
TOTALS.....		20.10	61,800	2,780

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Montreal River bridge at Latchford.....	1959	1960	Structural steel and rein- forced concrete
65	Casey Twp.: Blanche River at Judge....	1959	1960	Structural steel and rein- forced concrete
65	Casey Twp.: Wright Creek at Judge.....	1959	1960	Structural steel and rein- forced concrete
101	Ivanhoe River bridge at Foleyet.....	1959	1960	Laminated timber beams on concrete piers
TOTAL — 4				

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	Approximately ½ mi. north of Porquis Junction southerly.....	8.01	87,201
11	New Liskeard to Earlton.....	19.32	37,350
11, 65	Town of New Liskeard.....	0.98	2,586
65	Blanche River bridge at Judge.....	1.08	10,443
66	8.5 mi. east of Kirkland Lake to west of Larder Lake.....	6.06	7,704
66	Kirkland Lake easterly.....	8.6	5,511
66	Town of Kirkland Lake.....	1.08	12,962
66	8.5 mi. east of Kirkland Lake easterly.....	6.06	49,721
66	Hwy. 11 westerly for 10 mi.....	10	10,002
66	Kirkland Lake easterly 5.34 mi.....	5.34	62,310
101	Black River bridge at Matheson.....	1.73	11,692
101	Twin Lakes Road towards Ghost River.....	5	9,999
101	Eastman Creek 34.8 mi. west of Timmins.....		10,000
558	Haileybury limits to Montreal River.....	16	16,033
560	Gogama south-easterly.....	41	26,958
560	Elk Lake to Gowganda.....	28	25,033
567	Hwy. 11 south-easterly.....	17	14,974
TOTALS.....		175.26	400,479

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
65	Osseio to Elk Lake.....	16	28,900
101	Kukatush Road to Foleyet.....	21	13,400
	Ghost River westerly.....	3	1,400
560	Charlton to Gowganda.....	18	8,140
564	Hwy. 11 easterly.....	2	440
568	Hwy. 11 easterly.....	.50	110
570	Hwy. 11 easterly.....	1	120
572	Throughout.....	5	7,870
577	Monteith northerly.....	6	1,850
569	Hwy. 11 easterly.....	3	420
610	Connaught westerly.....	5	860
TOTALS.....		80.50	63,510

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
11	New Liskeard to Earlton, Earlton By-pass, town of Earlton and Sec. Hwy. 571 only.....	2.39	1960	.....	2.39
11	Montreal River bridge at Latchford.....	.22	1959	.....	.22
11, 65	Town of New Liskeard.....	.98	1960	.....	.98
11,					
101	Black River bridge, Matheson.....	1.73	1960	.....	1.30
65	Wright Creek and Blanche River at Judge....	1.00	1960	.....	.83
66	Main St. to Burnside Drive, Kirkland Lake....	1.08	1960	.....	1.08
66	Kirkland Lake easterly.....	5.34	1958	4.48	.86
66	8.5 mi. east of Kirkland Lake easterly.....	6.06	1959	3.0	3.06
TOTALS.....		18.80		7.48	10.72

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Porquis Junction southerly.....	8.01	1959	.....	8.01	330,309
11	Montreal River bridge, Latch- ford.....	0.35	1959	.02	.33	8,841
11	New Liskeard to Earlton (Earl- ton By-pass and Hwy. 571 only 1.09 mi.).....	19.31	1959	.....	1.09	64,621
11, 65	Town of New Liskeard.....	0.98	1960	.....	0.98	5,162
11,						
101	Black River bridge, Matheson.....	1.73	1960	.....	1.30	88,050
66	Main St. to Burnside Dr., Kirk- lane Lake.....	1.08	1960	.....	1.08	49,455
66	Kirkland Lake easterly.....	5.34	1958	5.14	.20	122,145
TOTALS.....		36.80		5.16	12.99	668,583

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Earlton southerly.....	9.44	1959	8.40	1.04	81,277
11	At 2½ mi. south and ½ mi. north of Cobalt.....	0.3	1960	.....	0.3	4,840
65	Elk Lake easterly.....	16	1960	.....	16	35,442
66	Hwy. 11 easterly.....	5	1960	.....	5	6,585
101	Timmins westerly (two revisions)	7	1960	.....	7	81,106
560	Hwy. 11 Westree (various loca- tions).....	12	1960	.....	12	65,973
562	Sec. Hwy. 571 east and west.....	5	1960	.....	5	28,761
564	Various places.....	.....	1960	.....	.....	600
566	3 mi. west of Hwy. 65 to 9 mi. west of Hwy. 65.....	6	1960	.....	6	12,414
567	Throughout.....	.....	1960	.....	.....	1,311
569	Hwy. 11 easterly.....	6	1960	.....	6	22,446
570	Hwy. 11 to Seseikinika.....	.75	1960	.....	.75	2,495
571	Hwy. 11 to Sec. Hwy. 562.....	3	1960	.....	3	32,194
572	Hwy. 11 to Holtvre.....	3	1960	.....	3	3,050
577	Hwy. 101 at Ansonville and various places.....	.....	1960	.....	.....	507
624	3 mi. north of Sec. Hwy. 569 for 15 mi. north.....	12	1960	.....	12	35,834
629	Timmins airport (shouldering).....	6	1960	.....	6	11,166
TOTALS.....		91.49		8.40	83.09	426,001

New Buildings

Hwy. No.	Location	Type of Building	Begun
11	Sesekinika.....	Salt shed	1960
65	8 mi. west of New Liskeard.....	Salt shed	1960
65	Kennabeek.....	Salt shed	1960
101	Foleyet.....	Salt shed	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....	.....	462	157
Development roads built.....	.....	.....	26
Off-road parks maintained.....	6	.....	.....
Roads snowploughed and kept open, King's Highways.....	6	.....	485
Roads snowploughed and kept open, Secondary Highways.....	16	.....	327
Roadside picnic places maintained.....	13	.....	.....
Routine maintenance, King's Highways.....	.....	.....	485
Routine maintenance, Secondary Highways.....	.....	.....	336
Salt for de-icing roads (raw).....	.....	4,750	417
Salt in sand, stockpiled.....	.....	822	.....
Sand for winter maintenance.....	.....	15,400	.....
Scale houses maintained.....	2	.....	.....
Seeding by department's forces.....(sq. yds.)	377,000	.....	.....
Shrubs received and planted this year.....	215	.....	.....
Signs erected or replaced.....	2,355	.....	.....
Snow fence erected, dismantled, stored.....	.....	.....	101
Zone painting on King's Highways.....(gals.)	4,735	.....	379
Zone painting on Secondary Highways.....(gals.)	275	.....	17



Highway 66—4 miles east of Kirkland Lake (New Liskeard District).

DISTRICT No. 16—COCHRANE**E. H. JONES, P.Eng., District Engineer****Construction**

The regrading of Highway 11 between Hearst and Kapuskasing was completed with the exception of a small amount of trimming work required on the contract immediately east of Hearst. Hot mix pavement was laid by the D.H.O. asphalt plant on Highway 11 from two miles south of Driftwood to three miles north of Driftwood, thus completing reconstruction of Highway 11 from Cochrane to Strickland. Hot mix paving from Cochrane to 10 miles south was completed by the asphalt plant. Paving of Highway 11 continued between Kapuskasing and Hearst by the asphalt plant which laid 19.80 miles of hot mix base and 41 miles of hot mix top. This completes paving with two courses from Kapuskasing to Opasatika and base course only from Opasatika to Lowther.

Two bridges at Kapuskasing were completed and officially opened to traffic by the Hon. Fred. M. Cass, Q.C., on October 28, 1960. Automatic railway signals were installed at Smooth Rock Falls (Mattagami Railway) and at Driftwood (C.N. Railway).

Maintenance

Seeding and mulching operations were carried out throughout the district and some two hundred acres seeded with very good results. Also slope seeding and landscaping of the two newly constructed Kapuskasing River bridges were started but not completed due to the early arrival of snow. Extensive brush spraying to control the growth of brush was carried out in the Hearst to Longlac area with favourable results experienced.

Major repairs were made to the west pier of the Frederickhouse River bridge and a new treated timber bridge was constructed on Secondary Highway 579.

Installation of the axle loading scale at Hearst was completed and the area landscaped. Two new salt sheds were constructed and extensive improvements were made to the patrol buildings and yards at Nagagami and Lydia Lake thus providing much better facilities.

We experienced a very cold winter with severe frost penetration due to a very light snow fall. We did not encounter any serious snow clearing problems.

Extensive clearing and widening of right-of-way sections of Highway 11 and clearing and gravelling on secondary highways were carried out during our winter work program.

Zone painting equipment and three new loaders were received and should prove very useful to the district maintenance organization.

A new all-steel ferry was constructed by D.H.O. forces, launched and put into service. She is named "*Cassiopeia IV.*"

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
11	Mattagami		
	Railway	North Cochrane County, Kendrey Twp.....	X
11	C.N.R.	North Cochrane County, Calder Twp.....	X



Kapuskasing River bridge construction on Highway 11 (Cochrane District).

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	2 mi. south of Driftwood for 3 mi. north of Driftwood.....	4.5	1960	.....	4.50	12,774
11	Kapuskasing airport to Harty (top only).....	10.30	1959	Base course	10.30	11,269
11	Harty to Opasatika (top only).....	8.24	1959	Base course	8.24	11,343
11	Opasatika to Lowther.....	9.98	1959	Base course	Base only	7,515
11	Hunta diversion (top only).....	7.66	1959	Base course	7.66	8,660
11	Cochrane south.....	10.30	1960	.....	10.30	24,587
TOTALS.....		50.98		.....	41.00	76,148

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
11	Kapuskasing to Fauquier (resurfacing sections only).....	4.5	4,546

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Kapuskasing.....	1959	1960	Steel truss, concrete deck, 1 span
11	Kapuskasing.....	1959	1960	Conc. deck, conc. piers, 4 spans
11	Devitt Twp.....	1959	1960	Timber pile, conc. deck, 1 span
579	Sec. Hwy. 579, Blount Twp.....	1960	1960	Treated timber piles, caps, and dock, 6 spans
TOTAL — 4				

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	Hearst easterly.....	8.32	58,976
11	Kapuskasing bridges.....		8,300
11	Mattice westerly.....	9.87	115,000
11	Missinaibi River bridge.....		600
11	Lowther to Mattice.....	10.12	113,500
11	Opasatika to Lowther.....	9.98	56,000
11	Cochrane south.....	10.30	68,000
574	Cochrane east.....	18	15,000
579	Cochrane north.....	18	15,000
583	Hearst south.....		15,000
TOTALS.....		84.59	465,376

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
11	Cochrane to Porquis Junction.....	32.8	8,415
11	Cochrane to Smooth Rock Falls.....	36	979
11	Smooth Rock Falls to Kapuskasing.....	40	1,376
11	Kapuskasing to Mattice.....	40	10,389
11	Hearst to Longlac (shouldering).....	134.9	3,800
67	Porquis Junction to Iroquois Falls.....	7	979
574	Cochrane to Norembega.....	18	1,630
578	Herman Lake to Montrock.....	6	2,755
579	Cochrane to Gardiner.....	18	2,439
581	Moonbeam to Remi Lake.....	3.5	30
583	Lac Ste. Therese to Meade.....	30.18	3,335
625	Jct. of Hwys. 11 and 625 to Caramat.....	20	50
631	Jct. of Hwys. 11 and 631 to Hornepayne.....	45	265
TOTALS.....		431.38	36,442

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
11	Lowther to Mattice.....	10.12	1959	8.0	2.12
11	Mattice westerly.....	9.87	1959	7.0	2.87
11	Hearst easterly.....	8.32	1960		8.32
574	Cochrane easterly.....	5	1960		5
579	Cochrane northerly.....	5	1960		5
583	Hearst south.....	5	1950		5
TOTALS.....		43.31		15.00	28.31

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
11	Hearst easterly.....	8.32	1960		8.32	372,900
11	Cochrane south.....	10.30	1959	9.5	.80	81,900
11	Opasatika to Lowther.....	9.98	1958	6.98	3.0	93,000
11	Lowther to Mattice.....	10.12	1959	5.0	5.12	307,300
11	Mattice westerly.....	9.87	1959	5.80	4.07	237,200
11	Missinaibi River bridge.....	Str.	1959		Str.	6,000
11	Kapuskasing River bridge.....	Str.	1960		Str.	105,346
TOTALS.....		48.59		27.28	21.31	1,203,646

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	Lydia Lake patrol site, 22 mi. east of Longlac.....	Temporary equipment storage	1960	1960
67	Porquis Junction patrol site, near Jct. of Hwys. 67 and 11..	Temporary equipment storage	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		451.75	156.58
Calcium for de-icing roads.....		21.90	301.60
Development roads built.....			7.0
Roads snowploughed and kept open, King's Highways.....	2		301.60
Roads snowploughed and kept open, Secondary Highways.....	7		159.71
Roadside picnic places maintained.....	17		
Routine maintenance, King's Highways.....			301.60
Routine maintenance, Secondary Highways.....			159.71
Salt for de-icing roads (raw).....		2,530.53	301.60
Salt in sand, stockpiled.....		460.75	
Sand for winter maintenance.....		11,634	
Scale houses maintained.....	2		
Seeding by department's forces.....(sq. yds.)	1,742,400		
Signs erected or replaced.....	1,725		
Snow fence erected, dismantled, stored.....			11.50
Weed control.....			135
Zone painting on King's Highways.....(gals.)	2,445		264.18
Zone painting on Secondary Highways.....(gals.)	30		3.12



Secondary Highway 578—1 mile west of Iroquois Falls (Cochrane District).

DISTRICT No. 17—SUDBURY**T. A. SHARPE, P.Eng., District Engineer****Construction**

Due to the opening of Highway 17 T.C.H. northwest of Sault Ste. Marie, a change in district boundaries ensued with the Sault taking in part of this new highway and moving its eastern boundaries to the west. Thus, Sudbury district expanded its western boundaries to the east limits of the town of Blind River, taking in 58 miles of Highway 17 T.C.H., Highway 108 to Elliot Lake and Secondary Highways 555, 557, 553 and 538. In this new area, two mining access roads off Highway 108 were paved under one contract, a distance of 1.60 and 1.16 miles respectively.

The year 1960 marked the opening of the new Spanish River bridge on Highway 68 at Espanola, greatly improving the northern entrance into the town. South of Espanola the second new grading contract on Highway 68 was completed as well as a concrete overhead structure over the C.P.R. completing another 5 miles of new grading.

On Trans-Canada Highway 69, a 12.32-mile grading and culvert contract was completed between Pointe-au-Baril and Magnetawan Bay. More than half a million yards of rock were excavated here. The granular base and paving contract for this piece of road is now well under way. New pavement was laid from Magnetawan River to French River, a distance of 18.29 miles. North of Sudbury, on Highway 69, the Whitson Creek bridge was completed and opened to traffic and work proceeded during the winter on 4.06 miles of grading from Val Caron south.

On Highway 17, at the east limits of the city of Sudbury, 0.87 miles of four-lane design were under construction, including two channelized intersections with 90% of the grading completed. West of Sudbury, 1.96 miles of Highway 17 T.C.H. between the Vermilion River and Whitefish were completed.

Grading progressed well on the Killarney to Burwash road. The day labour job on the Killarney end completed grading on approximately 5.1 miles as well as two Bailey bridges. On the eastern end, 5.3 miles of grading were completed under an equipment rental contract and three Bailey bridges erected. This narrows the remaining gap to 6½ miles.

Maintenance

In April of this year the western boundary of the district was extended to Blind River. This change added 150 miles to the district. In addition to the increased mileage of Highway 17, we now maintain Highway 108 as well as Secondary Highways 538, 553, 555 and 557.

Approximately 1.7 miles of the worst sections of the slippery pavement on Highway 69 were covered with a thin lift of Dix-seal. This material gives a relatively non-skid surface and indications are that it will provide a permanent solution to the problem of slippery pavement. Other slippery sections were

treated with the Department's new pavement "de-slicker." This machine burns the excess asphalt from the pavement surface using high temperature propane burners. Sections treated by these two methods will be studied during the coming year to see which gives the most lasting results.

The district bridge crew were very busy this year, in addition to normal maintenance repairs they erected seven Bailey bridges. The old bridge over Bannerman Creek on Secondary Highway 544, at Benny, was replaced with a Bailey bridge, a twin Bailey was erected on Highway 69 at the Naiscoot River, and five semi-permanent Baileys were completed on the Killarney-Burwash road.

An extensive winter works program was carried out this year; the work included granular lifts on Secondary Highway 537, old Highway 69 south of Sudbury, old Highway 17 at Whitefish, clearing of brush on Secondary Highways 538, 555 and 557 in the Blind River area and the construction of a salt shed at Tehkummah.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
544	Falconbridge	Sudbury County, Levack Twp.....	1
Alt. 69	C.P.R.	Sudbury County, city of Sudbury.....	1

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
68	Spanish River bridge and approaches at Espanola.....	0.90	1960	0.90	2,368.98
17 T.C.	Vermilion River to Whitefish.....	1.96	1960	1.96	5,059.38
69 T.C.	Magnetawan River to French River.....	18.29	1960	18.29	53,022.59
69	Whitson Creek bridge and approaches.....	0.24	1960	0.24	725.71
	Hwy. 108 to Consolidated Denison Mine....	1.60	1960	1.60	2,378.20
	Hwy. 108 easterly on Panel Mine road.....	1.16	1960	1.16	1,746.92
TOTALS.....		24.15		24.15	65,301.78

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
68	Ten Mile Point to South Bay Mouth.....	27	81,400	1,950
69 T.C.	Magnetawan River to Jct. of Sec. Hwy. 529.....	12	35,000	825
526	Hwy. 69 to Britt.....	2	5,800	150
545	Capreol to Milnet.....	10	29,100	700
549	Hwy. 17 to Lake Penage.....	9	26,200	630
TOTALS.....		60	177,500	4,255

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1960-61	Tons Placed 1960-61
69 T.C.	Sudbury to Rock Lake (scattered sections).....	1.7	600

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
68	Spanish River at Espanola.....	1958	1960	Structural steel and reinforced concrete
68	6 mi. south of Espanola.....	1959	1960	Reinforced concrete
69	Whitson Creek at Val Caron.....	1959	1960	Reinforced concrete
TOTAL - 3				

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17 T.C.	Vermilion River to Whitefish.....	1.96	19,526.66
17	0.14 mi. east of Falconbridge road to 0.2 mi. west of Barrydowne Avenue.....	0.87	16,453.00
68	Espanola Spanish River bridge and approaches.....	0.90	8,431.10
68	5 mi. south of Espanola southerly 4.7 mi.....	4.75	45,400.39
68	C.P.R. overhead bridge and approaches.....	0.23	2,020.25
68	Little Current southerly.....	.....	3,309.28
69 T.C.	Magnetawan River to French River.....	18.29	70,266.00
69	Whitson Creek bridge and approaches.....	0.24	2,202.33
69 T.C.	Vicinity of Magnetawan River.....	.....	15,010.53
69 T.C.	Pointe-au-Baril to Magnetawan River.....	.....	78,691.03
540, 542	Little Current to Gore Bay.....	.....	14,995.60
542	1 mi. east of Tehkummah.....	.....	14,998.74
545	5.2 mi. north of Capreol.....	.....	9,998.05
549	Hwy. 17 to Lake Penage.....	.....	9,997.54
555, 557	North of Blind River.....	.....	14,011.41
TOTALS.....		27.24	325,311.91

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17	Hagar to Blind River.....	147	5,200
68	Espanola to South Baymouth.....	82	10,900
69	Capreol to Jct. of Sec. Hwy. 529.....	87	18,000
537	Hwy. 69 to Wanapitei.....	13	5,200
540	Gore Bay to Meldrum Bay.....	47	6,600
542	Tehkummah to Jct. of Sec. Hwy. 540.....	48	4,700
544	Levack to Cartier.....	17	4,000
549	Hwy. 17 to Lake Penage.....	9	4,900
606	Hwy. 17 to Markstay.....	1	1,000
TOTALS.....		451	60,500



Trans-Canada Highway route marker on Highway 69 (T.C.H.)—south of Sudbury (Sudbury District).

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
17 T.C.	Vermilion River to Whitefish.....	1.96	1959	0.50	1.46
17	0.14 mi. east of Falconbridge road to 0.2 mi. west of Barrydown Avenue.....	0.87	1960		0.78
68	Espanola Spanish River bridge and ap- proaches.....	0.90	1958	0.50	0.40
68	C.P.R. overhead bridge and approaches	0.23	1959	0.03	0.20
68	5 mi. south of Espanola southerly 4.7 mi.	4.70	1959	1.00	3.70
69 T.C.	Magnetawan River to Pointe-au-Baril	12.32	1958	4.00	8.32
69	Whitson Creek bridge and approaches.	0.24	1959	0.01	0.23
540	Gore Bay westerly.....	3.50	1960		3.50
544	Cartier Turn westerly (D.H.O. Forces)	2.00	1960		1.0
	Killarney-Burwash road (equipment rent- al): C.N.R. tracks to Wanapitei River	5.3	1960		5.3
	Killarney-Burwash road: Killarney east- erly to Tyson Channel.....	3.1	1960		3.1
	Tyson Channel easterly (Killarney-Bur- wash road).....	4.0	1960		2.0
	TOTALS.....	39.12		6.04	29.99

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	Vermilion River to Whitefish....	1.96	1959	0.50	1.46	17,477.36
17	0.14 mi. east of Falconbridge road to 0.2 mi. west of Barry- downe Avenue.....	0.87	1960	.....	0.78	31,349.00
68	Espanola Spanish River bridge and approaches.....	0.90	1958	.....	0.90	29,344.89
68	5 mi. south of Espanola south- erly 4.7 mi.....	4.70	1959	1.0	3.70	110,734.58
68	C.P.R. overhead bridge and approaches.....	0.23	1959	.....	0.23	3,988.59
69 T.C.	Magnetawan River to Pointe- au-Baril.....	12.32	1958	4.0	8.32	69,956.26
69 T.C.	Magnetawan River to French River.....	18.29	1960	.....	18.29	52,974.00
69	Whitson Creek bridge and ap- proaches.....	0.24	1959	0.01	0.23	4,837.80
540	Gore Bay westerly.....	3.50	1960	.....	3.50	44,237.00
544	Cartier Turn westerly (D.H.O. Forces).....	2.0	1960	.....	1.0	6,000.00
	Killarney-Burwash road (equipment rental): C.N.R. tracks to Wanapitei River....	5.3	1960	.....	5.3	120,000 (some used for fills)
	Killarney-Burwash road: Kil- larney easterly to Tyson Channel.....	3.1	1960	.....	3.1	39,666.00
	Killarney-Burwash road: Tyson Channel easterly.....	4.0	1960	.....	2.0	2,571.00
	TOTALS	57.41		5.51	48.81	533,136.48

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
Old 17	Whitefish to Nairn Centre.....	1.9	1960	.....	1.9	11,103
Old 69	South of Sudbury.....	3.7	1960	.....	3.7	9,513
537	Vicinity of Wanup.....	3.8	1960	.....	3.8	20,748
	TOTALS	9.4		.....	9.4	41,364

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
542	Tehkummah.....	Salt shed	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		850	170
Off-road parks maintained.....	16		
Roads snowploughed and kept open, King's Highways.....			327.1
Roads snowploughed and kept open, Secondary Highways.....			382.5
Roadside picnic places maintained.....	13		
Routine maintenance, King's Highways.....			327.1
Routine maintenance, Secondary Highways.....			442.0
Salt for de-icing roads (raw).....		5,357	393.0
Salt in sand, stockpiled.....		1,528	
Sand for winter maintenance.....		15,420	
Scale houses maintained.....	2		
Seeding by department's forces.....(sq. yds.)	34,700		
Signs erected or replaced.....	3,491		
Snow fence erected, dismantled, stored.....			80.2
Traffic lights installed this year.....	1		
Weed control.....			10.5
Zone painting on King's Highways.....(gals.)	4,860		327.1
Zone painting on Secondary Highways.....(gals.)	1,045		65.0



Spanish River bridge at Espanola on Highway 68 (Sudbury District).

DISTRICT No. 18—SAULT STE. MARIE**D. P. COLLINS, P.Eng., District Engineer****Construction**

Grading and granular base was completed on 23.88 miles of Trans-Canada Highway 17 north of Sault Ste. Marie to Havilland Bay. A base course of H.L. 4 was laid on 19 miles of this section.

Four structures over the Root River on Highway 17 north of Sault Ste. Marie were completed along with a major structure over the Goulais River.

Grading, granular base and paving operations were also started on Highway 17 east and west of Blind River, with one course of pavement being laid on the four miles west of Blind River.

On Highway 129, south of Chapleau, 110,000 tons of granular "B" and 20,000 tons of $\frac{5}{8}$ -inch crushed gravel were placed to improve this section of road.

A new concrete culvert was constructed at Mile 71 on Highway 17 north of Sault Ste. Marie to replace an old cracked structure.

Clearing operations for future contract work were also completed on Highway 17 between Harmony Beach and the Carp River.

Maintenance

During the year the district boundaries were changed when we took over the "Gap" section of Trans-Canada Highway 17. This entailed setting up many new patrols and supplying them with new equipment.



Bailey bridge on Highway 129—68 miles north of Thessalon (Sault Ste. Marie District).



Grading on Highway 17 (T.C.H.)—8 miles north of Sault Ste. Marie (Sault Ste. Marie District).

Included in this new equipment were large tandem snowploughs and mechanical sanders, which proved fully capable of keeping the highway open during the winter.

A new garage, serving two patrols, was built at Wawa, and a new salt storage shed was erected at Agawa.

Over 800 acres were seeded on Trans-Canada Highway 17 north of Sault Ste. Marie. A start was made in developing picnic sites between Sault Ste. Marie and Marathon.

Two plastic covered sheds were built at Agawa River Patrol to shelter equipment.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C. Sault Ste. Marie to Heyden.....		9.43	1960	Base course	2,131.29
17 T.C. Heyden to Havilland Bay.....		14.74	1960	Base course	20,964.26
17 T.C. Blind River east and west.....		10.	1960	Base course	5,117.00
17 T.C. Montreal River bridge.....		.84	1960	.84	2,715.60
TOTALS.....		35.01		0.84	30,928.15

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Compl. 1960-61	Tons Placed 1960-61
17	Mile 33 north of Sault Ste. Marie to mile 74.....	41	4,188.42

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Chips Used 1960-61
17 T.C. Junction Sec. Hwy. 563 to 32 mi. north.....		20	60,000	4,800
548	Hilton Beach to Richards Landing, St. Joseph Island....	11	33,000	1,320
TOTALS.....		31	93,000	6,120

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	3.5 mi. north of Sault Ste. Marie.....	1959	1960	Reinf. concrete
17 T.C.	4.9 mi. north of Sault Ste. Marie.....	1959	1960	Reinf. concrete
17 T.C.	16 mi. north of Sault Ste. Marie.....	1960	1960	Struct. steel
17 T.C.	Subway at Odena.....	1959	1960	Steel plate Girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17 T.C.	Sault Ste. Marie to Odena.....	3.88	18,324.29
17 T.C.	Odena to Heyden.....	5.37	48,059.78
17 T.C.	Heyden to Goulais River.....	6.77	16,311.96
17 T.C.	Goulais River to Havilland Bay.....	7.86	42,162.76
17 T.C.	Sault Ste. Marie to Heyden.....	9.43	2,719.03
17 T.C.	Heyden to Havilland Bay.....	14.74	7,319.45
17 T.C.	Blind River east and west.....	10.	58,797.65
17 T.C.	Montreal River bridge.....	.84	93,123.17
17 T.C.	Mile 33 north of Sault Ste. Marie to mile 74.....	41.	5,612.91
129	(a) 27.4 mi. south of Chapleau for 32.5 mi.) (b) 36.8 mi. south of Chapleau for 44.6 mi.)	12.9	130,055.55
129	Chapleau limits 25 mi. south.....	25.	14,994.54
556	Jct. of Hwys. 17 and 556 20 mi. northeast.....	25.	10,002.54
	Spanish American, Can-Met, Stanrock Mine roads.....	8.73	4,504.30
TOTALS.....		171.52	451,987.93

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17 T.C.	Blind River to Marathon.....	336	2,730
129	Thessalon to Chapleau.....	145	810
546	White River road.....	50	1,800
548	St. Joseph Island.....	36	1,150
550	Gros Cap road.....	11	150
554	Parkinson road.....	11	320
556	Searchmount road.....	23	1,040
563	Batchawana Village road.....	3	100
565	Point Aux Pins road.....	4	100
TOTALS.....		619	8,200

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
17 T.C.	Sault Ste. Marie to Odena.....	3.88	1959	2.4	1.48
17 T.C.	Odena to Heyden.....	5.37	1959	2.5	2.87
17 T.C.	Heyden to Goulais River.....	6.77	1958	6.4	.37
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	7.5	.36
17 T.C.	Blind River east and west.....	10.	1960	.....	3.4
17 T.C.	Montreal River bridge.....	.84	1960	.....	.84
TOTALS.....		34.72		18.80	9.32

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	Sault Ste. Marie to Odena.....	3.88	1959	2.4	1.48	2,653.60
17 T.C.	Odena to Heyden.....	5.37	1959	2.5	2.87	43,383.43
17 T.C.	Heyden to Goulais River.....	6.77	1958	6.4	.37	16,311.96
17 T.C.	Goulais River to Havilland Bay.....	7.86	1958	7.5	.36	37,415.83
17 T.C.	Blind River east and west.....	10.	1960	.....	3.4	82,266.00
	Spanish American, Can-Met and Stanrock Mine roads.....	8.73	1958	8.29	.44	652.71
TOTALS.....		42.61		27.09	8.92	182,683.53

Granular Base Where No Grading Was Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	Sault Ste. Marie to Heyden.....	9.43	1960	9.	1,715.71
17 T.C.	Mi. 33 north of Sault Ste. Marie to mi. 74....	41.0	1960	41.	5,612.91
129	(a) 27.4 mi. south of Chapleau for 32.5 mi. (b) 36.8 mi. south of Chapleau for 44.6 mi.	12.9	1961	10.5	110,001.12
17 T.C.	Montreal River bridge.....	.84	1960	.84	92,400.00
TOTALS.....		64.17		61.34	209,729.74

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Wawa.....	Garage for two patrols	1960	1960
17 T.C.	Agawa.....	Salt storage	1960	1960
17 T.C.	Sault Ste. Marie.....	Equipment storage	1960	1960
17 T.C.	Sault Ste. Marie.....	Office and storage	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		47	10
Roads snowploughed and kept open, King's Highways.....			503
Roads snowploughed and kept open, secondary highways.....			219
Routine maintenance, King's Highways.....			503
Routine maintenance, secondary highways.....			219
Salt for de-icing roads (raw).....		2,560	350
Salt in sand, stockpiled.....		1,750	
Sand for winter maintenance.....		42,500	
Scale houses maintained.....	1		
Seeding by department's forces..... (sq. yds.)	3,146,000		
Signs erected or replaced.....	6,739		
Snow fence erected, dismantled, stored.....			20
Zone painting on King's Highways..... (gals.)	3,070		230
Zone painting on secondary highways..... (gals.)	270		20

DISTRICT No. 19—FORT WILLIAM**J. B. GARLAND, P.Eng., District Engineer****Construction**

West of Fort William on Highway 17, we saw the completion of two adjacent grading jobs, totalling 19.45 miles, and placed a base course of asphalt over the full length.

East of Fort William on Highway 17 the following sections were completed to a sufficient extent to permit base paving which coincided with the opening of the North Superior Shore route: (a) Amethyst to Coldwater Creek, 25.7 miles; (b) Nipigon easterly for 10 miles, 10 miles; (c) West end of Selim diversion to Cavers, 15.6 miles. On all three sections at least one base course of asphalt was laid.

Also east of Fort William, some 22 miles of grading, on the section of Highway 17 from 10 miles east of Nipigon to Cavers, is well under way and should be completed during the next construction season. Grading from Schreiber westerly for 5.5 miles is virtually completed and will be paved during the next season. Grading and paving east and west of Terrace Bay for a total distance of 17.5 miles was also completed. Structures at Ouimet (grade separation), Coldwater Creek, Jackfish River, Jackpine River and Pays Platt (river and creek) were opened to traffic. Structures at the Big Gravel and Little Gravel rivers are nearing completion, as is the Cypress River bridge. Erection of steel at the Big Pic River bridge was almost completed.

On Highway 11, the grading for the first 10-mile section of the Atikokan-Fort Frances Road was approximately 90 per cent completed. Clearing was also done on 5 miles of the next 10-mile section.

One feature of the year's work was the addition of a third lane of pavement on four exceptionally long 7 per cent grades in the section between Selim diversion and Cavers. This provides two lanes for up-bound traffic and will facilitate the movement of traffic through this section.

Maintenance

Some 6.6 miles of low-cost bituminous pavement was laid by department forces with the Moto-Paver on Highway 130 west of Port Arthur. The department crusher produced 45,198.79 tons for general maintenance.

Five miles of Secondary Highway 588 from Highway 593 west was reconstructed by day labour.

In preparation for surface treatment between Geraldton and Longlac in 1961, 2,250 cubic yards of stone chips were produced in the Geraldton area.

A total of 65,000 tons of pit run gravel was placed on Highway 590 for eight miles, on Highway 599 for 35 miles and on Highway 614 for four miles.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
11A	C.N.R.	Thunder Bay District, Dawson Twp. Rd.....	X
11A	C.N.R.	Thunder Bay District, Dawson Twp. Rd.....	X
584	C.N.R.	Thunder Bay District, Nakina Twp.....	X

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	10.0 mi. south Red Rock corner to Ouimet.....	10.83	1959	.....	10.83	33,026
17 T.C.	Amethyst Station to Loon Lake road.....	8.65	1960	.....	Base only	19,539
17 T.C.	Loon Lake road to Ouimet.....	11.70	1960	.....	Base only	21,043
17 T.C.	Jackfish Lake to Terrace Bay....	17.64	1959	.43	17.21	31,379
17 T.C.	West Prairie River approach (padding).....	.....	1960	.....	.....	464
17 T.C.	Selim Diversion to Cavers.....	15.68	1960	.....	Base only	27,729
17 T.C.	Nipigon River bridge easterly..	10.40	1960	.....	Base only	14,221
17 T.C.	7.50 mi. north of Hwy. 11 to Poland.....	19.40	1960	.....	Base only	24,450
Secondary Road						
582	Hurkett Loop.....	4.00	1960	.....	4.00	8,290
TOTALS.....		98.30		0.43	32.04	180,141

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles in Project	Miles Compl. 1960-61	Tons Placed 1960-61
130	Port Arthur to Jct. sec. Hwy. 590.....	6.6	6.6	9,934
580	Vicinity Leitch Mine (five locations).....	1.2	1.2	2,280
TOTALS.....		7.8	7.8	12,214

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl.	Gals. Bit. Used	Tons Sand Used
11A	Jct. of Hwy. 11 easterly.....	15.0	25,553	1,749
585	Jct. of Hwy. 17 to Pine Portage.....	24.0	56,754	3,609
588	Jct. of Hwy. 17 southerly.....	1.5	4,925	207
589	Jct. of Hwy. 11A northerly.....	19.0	22,169	1,683
590	Kakabeka Falls to Jct. Sec. Hwy. 588.....	15.0	30,149	1,701
591	Jct. of Sec. Hwy. 589 to Trout Lake.....	5.0	7,668	468
595	Jct. of Sec. Hwy. 590 to Jct. of Sec. Hwy. 588.....	8.0	13,138	720
614	Vicinity of Manitouwadge.....	4.6	12,684	645
TOTALS.....		92.1	173,040	10,782

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	20 mi. southwest of Nipigon.....	1958	1960	Reinforced concrete, structural steel
17 T.C.	C.P.R. overhead, Ouimet.....	1959	1960	Reinforced concrete, structural steel
17 T.C.	8.7 mi. east of Nipigon River bridge.....	1960	1960	Reinforced concrete, structural steel
17 T.C.	Approx. 16.0 mi. east of Nipigon River bridge.....	1960	1960	Reinforced concrete, structural steel
17 T.C.	5.0 mi. northwest of Rossport.....	1959	1960	Reinforced concrete, structural steel
17 T.C.	5 mi. northwest of Rossport.....	1959	1960	Reinforced concrete, structural steel

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17 T.C.	Ouimet to Coldwater.....	.25	5,068
17 T.C.	Amethyst Station to Loon Lake road.....	2.65	37,445
17 T.C.	Loon Lake road to Pearl River.....	5.20	55,690
17 T.C.	Pearl River to Ouimet.....	6.50	63,789
17 T.C.	10.0 mi. south of Red Rock Corners to Ouimet.....	10.58	33,454
17 T.C.	Amethyst Station to Loon Lake road.....	8.65	10,796
17 T.C.	Loon Lake road to Ouimet.....	11.70	263
17 T.C.	Schreiber to White Sand Lake.....	5.5	44,500
17 T.C.	Jackfish Lake to Schreiber overhead.....	17.64	93,079
17 T.C.	West end Selim diversion to Pays Platt.....	7.60	15,797
17 T.C.	1.75 mi. west of Cavers to Pays Platt.....	8.00	64,171
17 T.C.	20.0 mi. east of Nipigon easterly.....	10.40	983
17 T.C.	10.0 mi. east of Nipigon easterly.....	9.73	74,000
17 T.C.	East end of Nipigon River bridge easterly.....	10.40	114,721
17 T.C.	7.50 mi. north of Shabaqua to 17.5 mi. north.....	10.10	
17 T.C.	Raith to Poland.....	9.35	98,926
11	Atikokan westerly 10.0 mi.....	10.00	45,690
582	Hurkett Loop.....	4.00	8,636
614	Jct. of Hwy. 17 to Black River.....	14.00	10,400
	TOTALS.....	162.25	777,408

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
130	Port Arthur to Jct. Sec. Hwy. 590.....	6.60	6,000
588	Jct. of Sec. Hwy. 593 5.0 mi. west.....	5.00	5,200
608	Jct. of Hwy. 61 to Jct. of Sec. Hwy. 595.....	5.00	5,000
614	Mi. 12 to mi. 40.....	28.00	20,000
	TOTALS.....	44.60	36,200

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
17 T.C.	Amethyst Station road to Loon Lake road..	8.65	1959	6.20	2.45
17 T.C.	Loon Lake road to Pearl River.....	5.20	1959	3.70	1.50
17 T.C.	Pearl River to Ouimet.....	6.50	1959	1.50	5.00
17 T.C.	Schreiber to White Sand Lake.....	5.50	1959		4.50
17 T.C.	Jackfish Lake to Terrace Bay.....	17.64	1959	16.00	1.64
17 T.C.	1.75 mi. west of Cavers to Pays Platt.....	8.00	1958	7.40	0.60
17 T.C.	20.0 mi. east of Nipigon easterly.....	10.40	1960		1.00
17 T.C.	10.0 mi. east of Nipigon easterly.....	9.73	1959	1.40	5.60
17 T.C.	Nipigon River bridge easterly.....	10.40	1959	7.00	3.40
17 T.C.	Raith to Poland.....	9.35	1959	3.30	6.05
11	Atikokan westerly 10.0 mi.....	10.00	1959		9.50
582	Hurkett Loop.....	4.00	1959	2.40	1.60
588	Jct. Sec. Hwy. 593 westerly 5.0 mi.....	5.00	1960		5.00
	TOTALS.....	110.37		48.90	47.84



Grading on Highway 17 (T.C.H.)—4 miles west of Schreiber (Fort William District)

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	Raith to Poland.....	9.35	1959	2.1	7.25	98,926
17 T.C.	7.50 mi. north of Shabaqua to Poland.....	19.45	1960	.....	19.45	23,870
17 T.C.	Ouimet to Coldwater.....	5.25	1958	5.25	.....	4,283
17 T.C.	Amethyst Station to Loon Lake road.....	8.65	1958	7.50	1.15	77,618
17 T.C.	Coldwater Creek bridge app.....	.06	1958	.....	.06	7,467
17 T.C.	C.P.R. overhead Ouimet App.....	.06	1959	.04	.02	2,488
17 T.C.	Loon Lake road to Pearl River..	6.20	1959	2.60	2.60	165,830
17 T.C.	Pearl River to Ouimet.....	6.50	1959	2.30	4.20	224,617
17 T.C.	10.0 mi. south of Red Rock Corners to Ouimet.....	10.83	1959	.....	10.83	18,628
17 T.C.	Jackfish Lake to Terrace Bay..	17.64	1959	16.0	1.64	123,980
17 T.C.	Schreiber to White Sand Lake	5.5	1959	.....	5.5	153,000
17 T.C.	West end of Selim diversion to Pays Platt.....	7.6	1958	7.6	.....	126,765
17 T.C.	1.75 mi. west of Cavers to Pays Platt.....	8.0	1958	5.00	3.00	31,545
17 T.C.	20 mi. east of Nipigon easterly..	10.4	1960	.....	1.0	1,950
17 T.C.	10 mi. east of Nipigon easterly..	9.73	1959	.....	7.0	207,000
17 T.C.	East end of Nipigon River bridge easterly.....	10.4	1959	6.0	4.4	478,185
11 T.C.	Atikokan westerly 10.0 mi.....	10.0	1959	.....	7.0	45,690
582	Hurkett Loop.....	4.0	1959	.....	4.0	4,722
588	Jct. of Sec. Hwy. 593 westerly	5.0	1960	.....	5.0	25,770
TOTALS.....		153.62		54.39	84.10	1,822,334

Granular Base Where No Grading Done

Hwy. Ho.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
590	Jct. of Sec. Hwy. 588 to 8.0 mi. north.....	8.0	1961	8.0	31,000
599	Medcalfe Lake to Cedar Rapids.....	15.0	1960	15.0	5,000
614	Mi. 20.0 to mi. 24.0.....	4.0	1960	4.0	15,500
599	Doghole Bay to Central Patricia Corner....	20.0	1961	6.0	13,500
TOTALS.....		47.0		33.0	65,000

New Buildings

Hwy. No.	Location	Type of Building	Begun	Compl.
61	Blake Twp.:Moose Hill.....	Salt storage	1959	1960
11	Shabaqua Jct.....	Salt storage	1959	1960
11	Ashmore Twp.....	Salt storage	1960	1960
	0.5 mi. north of Hwy. 17 on Mapleward road.....	Salt storage	1960	1960
	Various locations.....	Temporary explosives magazine	1960	1960
Access road	Spruce River access road.....	Temporary explosives magazine	1960	1960

Totals of Other Work Done

Item	Total Humber	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		392	75
Development roads built.....			2.6
Off-road parks maintained.....	20		
Roads snowploughed and kept open, King's Highways.....	5		583
Roads snowploughed and kept open, secondary highways.....	17		373
Roadside picnic places maintained.....	3		
Routine maintenance, King's Highways.....			588
Routine maintenance, secondary highways.....			373
Salt for de-icing roads.....		3,703	580
Salt in sand, stockpiled.....		733	
Sand for winter maintenance.....		11,338	
Scale houses maintained.....	1		
Seeding by department's forces.....(sq. yds.)	1,631,080		
Signs erected or replaced.....	4,000		
Snow fence erected, dismantled, stored.....			24.3
Weed control.....			255
Zone painting on King's Highways.....(gals.)	5,698		439
Zone painting on secondary highways.....(gals.)	157		12

DISTRICT No. 20—KENORA**F. B. WHITELEY, P.Eng., District Engineer****Construction**

Difficulty was encountered with rock fill settlement over muskeg sections on all contracts in the district. Even after digging out the muskeg, sufficient soft material was squeezed ahead of the advancing fill, creating a mudwave which had to be removed by force account. It was decided early in the year to surcharge and widen fills during the initial construction to allow for these settlements. In some cases where settlement did not occur, toe shooting was carried out to hasten the final settlement and, if necessary, the surcharge material was moved which again was paid for by force account.

Another interesting feature was the protection of a microwave tower quite close to a large rock cut. The area to be blasted was covered with a three-foot sand cushion and the charges were controlled by delayed action caps. This operation was entirely satisfactory and the work was completed with no damage to the tower.

Some difficulty has been encountered in providing for traffic through the extremely rugged terrain between Longbow Corners and Vermilion Bay on Highway 17, requiring the construction of rather expensive detours.



Rock-cut on Highway 17 (T.C.H.)—7 miles east of Longbow Corners (Kenora District).



Construction of Rainy Lake Causeway (Kenora District).

All piles are driven for the low level bridges on the Rainy Lake Causeway. A pier de-icing, air-bubbling system was installed at each pier to keep the pile piers free of ice. This installation was necessary due to the increase in ice movement attributed to the heavy construction loads using ice roads adjacent to the bridges, which would result in excessive pressures on the piles. Work has commenced on the 2,000-foot high-level bridge contract. The two main spans require eight 150-foot prestressed concrete girders erected to leave a 36-foot clearance above water level. The Rainy Lake Causeway contracts extend over a length of 19,400 feet. Of this length 6,900 feet is rock grading on the mainlands and islands; 7,900 feet is rock embankment causeway in water up to a depth of 50 feet with an average of 20 feet; 4,400 feet is bridging on steel tube pile piers with the longest piles being driven 100 feet below water level. Approximately 200 feet is a timber bridge. Seven contracts for grading, bridging and supplementary work have been awarded to date. The two bridge contracts for the 4,400 feet of bridging are not yet completed. On their completion the bridges will be finished to the underside of asphalt pavement and the grading portions to rock grade. For the construction of approximately 2,000 feet of the rock embankment causeway, the contractors worked during the winter months hauling the quarried rock over ice roads. Toe shooting of the underlying clay helped its displacement and also broke the ice ahead of the fill. However, ice trapped in the rock during construction did not melt until into the summer months causing settlement of the rock embankment. An experiment was tried using an air bubbling system to keep the water ahead of the fill clear of ice, so that no broken ice could be trapped.

Maintenance

In addition to the routine maintenance a rather large program of day labour construction was carried on throughout the district including the following:

Prime and surface treating of Highway 105, Red Lake road, 40 miles. Granular base and crushed gravel on 19 miles of Highways 72 and 116. Grading, ditching and granular base on Secondary Highway 621 for five miles. We also surface treated 13 miles of prime on Secondary Highway 621. Some 65,000 tons of $\frac{3}{8}$ -inch crushed gravel was crushed by the departmental crusher. Grading, ditching and granular base were carried out for three miles on Highway 119.

District forces erected two Bailey bridges during the year, one at Pinewood on Highway 11 and one at Vermilion Narrows on Highway 116 near Hudson. Piles were replaced and the Moon River bridge was replaced on Highway 128. Pelletiers bridge on Highway 604 and the Keewatin overhead on Highway 17 were all re-decked. The timber bridge over Agamac Creek was replaced with eight-foot multiplate culvert. We constructed two salt sheds: one in Dryden, one at Dinorwic; we also constructed weigh scales at Crozier, Highway 11, west of Fort Frances and carried out signing on all secondary highways throughout the Rainy River district, bringing the signing of these roads up to standard.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
11	C.N.R.	Rainy River Dist., Fort Frances Subdivision (Indian Reservation)	X
617	C.N.R.	Rainy River District, Morley Twp.	X

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17 T.C.	6.1 mi. east of Manitoba boundary	12.54	1960	12.54	.....	19,706
17 T.C.	5 mi. west of Hwy. 105 westerly	11.34	1960	.....	5.67	15,159
17 T.C.	Butler to Ignace	7.50	1960	.....	7.50	18,432
11	Approaches to Rainy River International Bridge	2.0	1960	.....	2.0	5,977
17 T.C.	2.5 mi. west of Raleigh to 1.5 mi. east of Butler	9.93	1960	.....	9.93	24,192
17 T.C.	Winnipeg River Bridge (east branch)	0.5	1960	.....	0.5	1,553
TOTALS		43.81		12.54	25.60	85,019

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1960-61	Tons Placed 1960-61
17	English River to Longbow Corners	178.02	178.02	1,496.5
17	Kenora (west limits) to Ontario-Manitoba boundary	31.30	31.30	114.
11	Pinewood to Rainy River	11.40	11.40	19.5
11 & 71	Jct. of Hwy. 71 to Fort Frances	40.90	40.90	9.
71	Sioux Narrows to Jct. of Hwys. 11 & 71	62.31	62.31	490.
72	Dinorwic to Sioux Lookout	41.95	41.95	55.
105	Vermilion Bay to Red Lake	108.58	108.58	760.
125	Jct. of Hwy. 105 to McKenzie Island dock	8.70	8.70	195.
598	Rabbitt Lake road	2.80	2.80	81.
604	Kenora (east limits) to Redditt	17.30	17.30	142.
621	Sleeman to Bergland	16.80	16.80	118.
TOTALS		520.06	520.06	3,480.00

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
105	2 mi. north of Vermilion Bay northerly.....	9.	37,165	527
	16 mi. north of Vermilion Bay northerly.....	16.	61,585	938
	Bug River to Jct. of Hwys. 105 & 125.....	6.	24,775	351
125	Chukuni River bridge to McKenzie Island dock.....	6.5	25,125	380
TOTALS.....		37.50	148,650	2,196

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used	Tons Chips Used
105	2 mi. north of Vermilion Bay northerly.....	9	24,043	674
105	16 mi. north of Vermilion Bay to Perrault Falls.....	26	69,011	1,994
105	Bug River to Jct. of Hwys. 105 and 125.....	6	15,111	440
125	Chukuni River bridge to McKenzie Island dock.....	6.5	17,433	479
621	Sleeman to 14 mi. north.....	13	39,537	1,284
TOTALS.....		60.50	165,135	4,871

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17	12.2 mi. east of Manitoba boundary to 18.4 mi. east of Manitoba boundary.....	6.2	24,216
17	5 mi. west of Hwy. 105 westerly for 16.1 mi.....	11.1	386
17	Ignace to 1.5 mi. east of Butler.....	7.42	1,337
TOTALS.....		24.72	25,939

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Tons Placed 1960-61
17	English River to Manitoba-Ontario boundary.....	222.77	4,929
11	Jct. of Hwy. 71 to Rainy River.....	33.74	120
11 & 71	Jct. of Hwy. 71 to Fort Frances.....	24.9	60
71	Longbow Corners to Jct. of Hwys. 11 & 71.....	96.61	1,144
72	Dinorwic to Sioux Lookout.....	41.95	12,964
105	Vermilion Bay to Red Lake.....	108.58	8,769
116	Patricia Corners to Hudson.....	10.06	4,632
119	Jct. of Hwy. 17 to Richan.....	13.01	8,342
125	Jct. of Hwy. 105 to McKenzie Island dock.....	8.7	1,002
128	Kenora (north limits) to Redditt.....	18.6	1,041
596	Darlington Bay bridge to Jct. of Hwy. 17.....	18.2	357
598	Sec. Hwy. 604 to Hwy. 128.....	2.8	76
600	Jct. of Hwy. 71 to Rainy River.....	59.0	4,581
601	Jct. of Hwy. 17 (east branch) to Jct. of Hwy. 17 (west branch).....	16.6	1,428
602	West limits town of Fort Frances to Jct. of Hwys. 11 & 71 (Emo)....	29.2	2,116
603	Jct. of Hwy. 17 to Dymont.....	3.1	75
605	Jct. of Hwy. 17 to end of road.....	7.55	486
609	Jct. of Hwy. 105 to Clay Lake.....	10.1	186
611	Sherwood to end of road.....	12.7	244
613	Big Fork to Lake Despair.....	25.5	3,147
615	Clearwater Lake to Jct. Hwy. 71.....	12.5	1,812
617	Stratton to Jct. Sec. Hwys. 600 & 617 (north branch).....	14.4	2,218
618	Red Lake to Starrat Olson Mine.....	8.85	4,030
619	Pinewood to Jct. Sec. Hwy. 621.....	25.5	2,437
621	Sleeman to Lake of the Woods.....	33.4	633
TOTALS.....		858.32	66,829

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
105	Pickereel Creek 33.5 mi. north of Hwy. 17....	0.28	1960	.....	0.28
17 T.C.	12.2 mi. east of Manitoba boundary easterly.....	6.20	1958	5.00	1.20
17 T.C.	5 mi. west of Hwy. 105 westerly.....	11.1	1959	7.00	4.10
17 T.C.	Ignace to 1.5 mi. east of Borup's Corners..	7.42	1959	1.00	6.42
71	Canadian approaches to Rainy River International bridge.....	2.23	1959	1.23	1.00
17 T.C.	Longbow Corners easterly.....	9.00	1960	.....	7.50
17 T.C.	10 mi. east of Longbow Corners easterly....	9.57	1960	.....	7.00
17 T.C.	19 mi. east of Longbow Corners easterly....	11.08	1960	.....	.33
TOTALS.....		56.88		14.23	27.83

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17	12.2 mi. east of Manitoba boundary easterly.....	6.20	1959	4.20	2.00	618
17	Ignace to 1.5 mi. east of Butler..	7.42	1959	0.50	6.92	65,966
17	5 mi. west of Hwy. 105 westerly	11.10	1959	.....	11.10	108,555
17	Longbow Corners easterly.....	9.00	1960	.....	6.60	115,243
17	10 mi. east of Longbow Corners easterly.....	9.57	1960	.....	6.20	61,145
105	Pickereel Creek 33.5 mi. north of Hwy. 17.....	0.28	1960	.....	0.28	11,577
TOTALS.....		43.57		4.70	33.10	363,104

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
72	Dinorwic to Sioux Lookout.....	41.95	1960	41.95	50,332
17	English River to Ont.-Man. boundary.....	222.77	1960	222.77	12,507
11	Jct. of Hwy. 71 to Rainy River.....	33.74	1960	33.74	96
71	Longbow Corners to Jct. of Hwys. 11 & 71..	96.61	1960	96.61	2,011
105	Vermilion Bay to Red Lake.....	108.58	1960	108.58	976
116	Patricia Corners to Hudson.....	10.06	1960	10.06	38,815
119	Jct. of Hwy. 17 to Richan.....	13.01	1960	13.01	42,487
128	Kenora (north limits) to Redditt.....	18.60	1960	18.60	1,797
594	Dryden (town limits) to Jct. of Hwy. 17....	22.60	1960	22.60	120
596	Darlington Bay bridge to Jct. of Hwy. 17....	18.2	1960	18.20	6,072
600	Jct. of Hwy. 71 to Rainy River.....	59.0	1960	59.0	6,247
601	Jct. of Hwy. 17 (east branch) to Jct. of Hwy. 17 (west branch).....	16.6	1960	16.6	1,552
602	West limits Town of Fort Frances to Jct. of Hwys. 11 and 71 (Emo).....	29.2	1960	29.2	3,540
604	Kenora (east limits) to Jct. of Hwy. 128....	17.3	1960	17.3	5,338
605	Jct. of Hwy. 17 to end of road.....	7.55	1960	7.55	30
611	Sherwood to end of road.....	12.7	1960	12.7	1,653
613	Big Fork to Lake Despair.....	25.5	1960	25.5	36
615	Clearwater Lake to Jct. of Hwy. 71.....	12.5	1960	12.5	4,743
617	Stratton to Jct. of Hwys. 600 & 617 (north branch).....	14.4	1960	14.4	3,492
618	Red Lake to Starratt Olsen Mine.....	8.85	1960	8.85	2,932
619	Pinewood to Jct. of Sec. Hwy. 621.....	25.5	1960	25.5	3,978
621	Sleeman to Lake of the Woods.....	33.4	1960	33.4	71,298
TOTALS.....		848.62		848.62	260,052

New Buildings

Hwy. No.	Location	Type of Building	Begun	Compl.
17	D.H.O. garage area, Dryden.....	Salt shed	1960	1960
17	D.H.O. yard, Dinorwic.....	Salt shed	1960	1960
11 & 71	6.5 mi. west of Fort Frances.....	Scale house	1960	1960

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads.....		1,652	454
Calcium for de-icing roads.....		20	50
Off-road parks maintained.....	26		
Roads snowploughed and kept open, King's Highways.....	9		582.96
Roads snowploughed and kept open, secondary highways.....	18		328.00
Roadside picnic places maintained.....	5		
Routine maintenance, King's Highways.....			582.22
Routine maintenance, secondary highways.....			328.00
Salt for de-icing roads (raw).....		1,384	395.00
Salt in sand, stockpiled.....		15,663.41	
Sand for winter maintenance.....		35,568	
Scale houses maintained.....	4		
Seeding by department's forces.....(sq. yds.)	1,689,160		
Signs erected or replaced.....	3,873		
Snow fence erected, dismantled, stored.....			48.56
Zone painting on King's Highways.....(gals.)	3,257		273.2
Zone painting on secondary highways.....(gals.)	33		3.8



Piers for low-level structure—Rainy Lake Causeway (Kenora District).

SP 56-1—WHITE RIVER

E. R. KENNY, P.Eng., Project Engineer

Construction

On September 17, 1960, this portion of the Trans-Canada Highway was officially opened to traffic. At that time, a full depth pavement had been laid throughout except for twenty-three miles comprising two contracts north and south of Wawa, on which grading had been carried out during the previous winter. Over this section, a two-inch base course had been laid. It was thought that the fills should be allowed to settle at least another year before adding the two top courses.

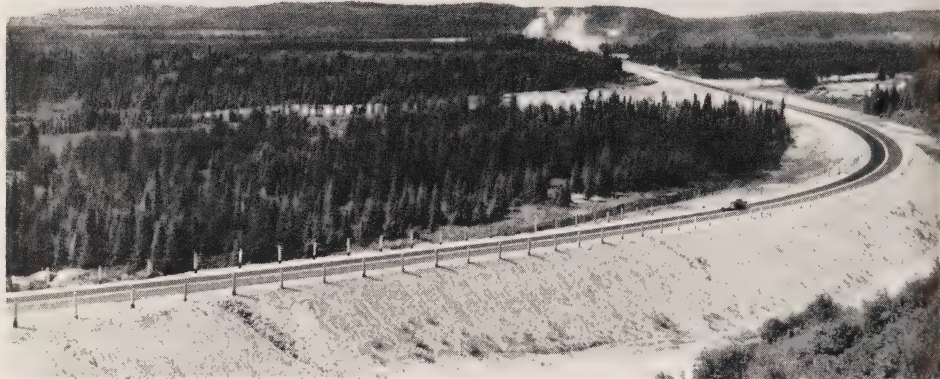
This season proved to be the busiest spent on the project. Two major grading jobs and a 1.6-mile access road to Wawa were completed. Eight major paving contracts and five bridges were completed. Among the bridges were two large steel truss bridges across the Agawa River and White Lake Narrows.

Maintenance

Maintenance work on this project was carried out by Fort William district until October 16, 1960, and by District 18, Sault Ste. Marie thereafter.



White Lake Narrows bridge on Highway 17 (T.C.H.)—(Project 56-1, White River).



Highway 17 (T.C.H.)—1 mile south of Wawa (Project 56-1, White River).

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1960-61	Tons Placed 1960-61
17	White Lake Narrows easterly.....	9.35	1960	9.35	34,097
17	C.P.R. overhead east of White River easterly.....	20.10	1960	20.10	80,895
17	28 mi. east of White River to Bedpan Lake.....	9.60	1960	9.60	34,535
17	10 mi. north of Wawa to Bedpan Lake.....	9.62	1960	Base only	15,616
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	18.84	1959	18.84	35,189
17	6 mi. south of Michipicoten River southerly....	13.30	1960	Base only	21,486
101	Entrance from Hwy. 17 T.C.H. to the Village of Wawa.....	1.60	1960	1.60	4,405
17	15 mi. north of the Agawa River northerly..	14.50	1960	14.50	51,314
17	3 mi. south of the Agawa River bridge northerly.....	18.84	1959	18.84	47,328
TOTALS.....		115.75		92.83	324,865

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960-61	Gals. Bit. Used 1960-61	Tons Sand Used 1960-61
17	White Lake Narrows to 11.5 mi. west of White River.....	9.10	44,946	1,439
17	C.P.R. overhead east of White River easterly.....	15.90	65,103	960
17	28 mi. east of White River and Kabenung to Bedpan Lake.....	9.60	37,768	948
17	10 mi. north of Wawa to Bedpan Lake.....	9.62	40,672	999
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	4.84	16,213	754
17	6 mi. south of Michipicoten River southerly.....	13.30	56,893	1,398
17	15 mi. north of Agawa River northerly.....	14.50	52,200	1,857
17	3 mi. south to 15 mi. north of Agawa River.....	9.84	37,027	1,109
TOTALS.....		86.70	350,822	9,464

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17	White Lake Narrows.....	1958	1960	Stabbogen Truss
17	White River east.....	1958	1960	Concrete on steel beam
17	Old Women River.....	1958	1960	Concrete on steel beam
17	Sand River.....	1959	1960	Concrete on steel beam
17	Agawa River.....	1959	1960	Pettit Truss

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Tons Miles 1960-61	Tons Placed 1960-61
17	White Lake Narrows to 11.5 mi. west of White River.....	9.30	35,680
17	10.6 mi. west of White River to 8.4 mi. east of White River.....	19.00	8,914
17	C.P.R. overhead east of White River easterly.....	20.10	89,036
17	28 mi. east of White River and Kabenung to Bedpan Lake.....	9.60	113,421
17	10 mi. north of Wawa to Bedpan Lake.....	9.62	89,568
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	18.84	106,461
17	6 mi. south of Michipicoten River southerly.....	13.30	122,078
17	15 mi. north of Agawa River northerly.....	14.00	67,336
17	3 mi. south to 15 mi. north of Agawa River bridge.....	18.84	18,339
101	Entrance from Hwy. 17 to Town of Wawa.....	1.60	11,872
TOTALS.....		134.20	662,705

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1960-61	Miles Placed 1960-61
17	White Lake Narrows to 11.5 mi. west of White River.....	9.30	210
17	10 mi. north of Wawa to 6 mi. south of Michipicoten River.....	18.84	558
TOTALS.....		28.14	768

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61
17	6 mi. south of Michipicoten River 2 mi. southerly.....	7.0	1958	5.5	1.5
17	2 mi. south of Old Woman River, southerly....	10.3	1958	9.0	1.3
101	Entrance from Hwy. 17 to Town of Wawa..	1.6	1960	.....	1.6
TOTALS.....		18.90		14.50	4.40

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1960-61	Tons Placed 1960-61
17	28.4 mi. east of White River easterly.....	9.60	1960	.....	9.60	110,421
17	10 mi. north of Wawa northerly..	9.62	1960	.....	9.62	89,568
17	6 mi. south of Michipicoten River southerly.....	7.00	1959	4.50	2.50	51,063
17	2 mi. south of Old Woman Bay southerly.....	10.30	1959	0.50	9.80	77,582
101	Entrance from Hwy. 17 to Town of Wawa.....	1.60	1960	.....	1.60	11,872
TOTALS.....		38.12		5.00	33.12	340,506

New Buildings

New buildings are for maintenance purposes, and will be reported by District 18.

Totals of Other Work Done

Roads snowploughed and kept open, King's Highways.....	*
Roads snowploughed and kept open, secondary highways.....	*
Routine maintenance, King's Highways.....	*
Salt for de-icing roads (raw).....	*
Salt in sand, stockpiled.....	*
Sand for winter maintenance.....	*
Seeding by department's forces.....	*
Signs erected or replaced.....	*
Zone painting on King's Highways.....	*
Zone painting on secondary highways.....	*

Items marked with an asterisk were carried out by forces from Districts 18 and 19 and will appear on their report.

PLANNING AND DESIGN BRANCH**JOHN WALTER, P.Eng., *Director of Planning and Design*****PLANNING DIVISION****J. B. Wilkes, P.Eng.**
*Planning Engineer***ROAD DESIGN DIVISION****D. G. Ramsey, P.Eng**
*Road Design Engineer***BRIDGE DIVISION****A. M. Toye, P.Eng.**
*Bridge Engineer***LOCATION SECTION****H. A. MANTLE, P.Eng., *Location Engineer*****Location Field Subsection**

A type of survey which is becoming more common made its appearance for the first time this year. This is the survey work required for roads leading into parks operated by the Department of Lands and Forests. The first such survey was the Killbear Park access road in the Huntsville district.

A total of one thousand miles of location surveys for existing and proposed highways were completed. In addition, one hundred and thirty-five surveys for bridge sites and eighty surveys for Railway Board plans were completed.

Surveys for traffic studies were undertaken for the following:

147 Turning Movement Surveys;

91 Speed Study Surveys;

837 Traffic Volume Count Surveys; and

7,340 Traffic Vehicle Counts, taken on
regular scheduling on a 24-hour basis.

Location Plans Subsection

971 miles of location plans of existing and proposed highways were completed. This is less than the amount of work completed last year and the reduction is due largely to the forming of the Southwestern Region Planning Section. Some 133 plans were completed for bridge site surveys; 70 Railway Board plans were completed and 98 special plans were prepared, mainly for the Location Project Section.

Some 915.8 miles of grading and alignment work were completed and 96 bridge site plans were issued to the bridge office for design purposes. A summary of this design work, by districts, is as follows:

District	Grade and Alignment (Miles)	Bridge Site Plans (Supplied to Bridge Office for Design)
Chatham.....	13.9	7
London.....	.....	1
Stratford.....	4.8	23
Hamilton.....	145.0	3
Owen Sound.....	.....	7
Toronto.....	87.2	1
Port Hope.....	19.1	5
Kingston.....	131.9	26
Ottawa.....	152.1	1
Bancroft.....	80.3	6
Huntsville.....	37.5	4
North Bay.....	120.8	5
New Liskeard.....	35.9	.....
Cochrane.....	14.9	1
Sudbury.....	45.5	1
Sault Ste. Marie.....	28.9	3
Fort William.....	121.0	2
Kenora.....	137.0	.....
TOTAL MILES.....	915.8	96

The production of strip maps was increased to include all Secondary Highways.

Photogrammetry Subsection

This Group projected on aerial photographs some 562 miles of new centre line locations and added 389 miles of revised location on existing study plans. Fifteen study plans were produced at a scale of 400 feet equals 1 inch. Nineteen plans of the same scale were revised. Five study plans were produced at a scale of 1 inch equals 1,320 feet and one plan of the same scale was revised.

Photo investigations of interest were made in the following areas: Vankoughnet area; Sudbury to Timmins; Hornepayne to Manitouwadge; White River; Chapleau to Sudbury; Elliot Lake to Highway 546; Dalton to Missanabie.

This section has recently been supplied with Stereoplotting and Ancillary Electronic Computing equipment which now makes it possible to compute earth work quantities between existing ground elevations and the grade that has been set for a road directly from aerial photographs with a minimum amount of field control.

Intersection Design Subsection

Channelization completed.....	30
Interchanges completed.....	58
Service road designs.....	3
Miscellaneous projects.....	124
Truck climbing lane designs.....	7
Property sales processed.....	42
Property requisition.....	4
Applications (Motels, Service Stations, etc.).....	94
Patrol Yards.....	41

STATISTICS AND ECONOMICS SECTION

P. E. WADE, P.Eng., Highway Analysis Engineer

Throughout the past year the Section continued to expand the breadth of its services and the number of research projects completed or underway. Much

progress was made in the areas of statistical studies, highway and bridge inventory information, urban planning surveys, rural transportation studies, etc., and a major research project was started into the subject of reviewing the policy on municipal road and street subsidies for Ontario.

Inventory

This Group carried out its duty to maintain the engineering inventory on provincial roads, bridges, and railroad crossings; and it provided the basic information required by the Program and Special Services Section for their planning studies.

In addition, the group received and answered over four hundred requests for inventory information including official highway and road mileages, for use throughout the Department.

A major accomplishment of the group during the year was the preparation and publishing of the Highway Log for King's and Secondary Highways, which is an I.B.M. compilation of inventory data information for each section of the provincial highway systems. The Highway Log will be published annually and distributed throughout the Department as a ready reference for inventory information.

Transportation Studies

In October 1960, the study entitled "A Highway Plan for the Hamilton-Wentworth Area" was published and widely distributed. Also, through the year, work was continued on a comprehensive study of roads and highways in the Niagara Peninsula region; and on a study of highway service needs over the King's Highway 3 corridor, Fort Erie to Windsor.

Primarily, however, the group investigated and reported on the many and varied requests for road improvement, assumption or other action which the Department received annually from local municipalities, other road jurisdictions and private parties. More than 45 such reports were prepared during the year, of which about 30 concerned roads located in Northern Ontario.

Urban Studies

This group was responsible for work in two main fields. First, it carried out liaison and supervised the traffic studies undertaken in cities in Ontario by consultants. Approximately 20 such studies were contracted for under the terms of the Highway Improvement Act which permits the subsidizing of city traffic studies to the extent of 75 per cent of the cost. Personnel of this group worked closely with the municipalities and their traffic engineering consultants to ensure that the studies were executed competently and that the Department's interests were maintained.

Secondly, the group prepared regional plans of highway needs in built-up suburban areas beyond city boundaries. The two areas under study during this period include the area surrounding Metropolitan Toronto and the area external to the cities of Guelph, Kitchener-Waterloo, Preston and Galt. In these studies the Department engineers worked closely with the local engineers and planners to develop long-range highway plans for the areas.

Statistical Studies

During the year two reports on the subject of transportation in Ontario were completed. These were "Historic Trend and Forecast of Motor Vehicle Travel in the Province of Ontario," and "The Effect of Piggyback on Highway Traffic in Ontario," dealing with the movement of motor transports on railway flat cars.

Highway Finance Study

A special unit of the Statistics and Economics Section which was established to undertake this major project is now well underway. Its purpose is the study, analysis and review of provincial policy with respect to the granting of financial aid to municipalities for the construction and maintenance of local roads and streets. "The Highway Needs Study," published in 1959, is being used as the basis for this new project.

A committee composed of personnel from the Statistics and Economics Section and the Municipal Roads Branch was formed to conduct the study; and an advisory committee composed of selected representatives of the Departments of Economics, Highways, Municipal Affairs and Transport also was formed to investigate and discuss overall provincial policy for the project.

TRAFFIC SECTION

W. Q. MACNEE, P.Eng., Traffic Engineer

Traffic Control

The Traffic Control Subsection completed its first year of operation with the work in one region being done entirely by the regional traffic engineer and his staff, with the temporary exception of Highway 401 signing and traffic signal timing. The Southwestern Region traffic engineering group started late last year with only the regional traffic engineer. One analyst and a draughtsman were added during this year. It is expected that an additional analyst from Head Office will be assigned to the region within a few months. All the district offices have been working directly with the regional traffic engineer, with the result that a better working relationship has been established with the districts.

It is anticipated that an Eastern Region office will be established in about a year's time, with the remaining regional offices being set up in 1963. At that time all traffic operational work will be done by the regional offices with a small Head Office staff in charge of standards and research.

The work done in the remainder of the Province by the Head Office group during the past year is summarized below.

Traffic Signals and Flashing Beacons

During the fiscal year of 1960, major changes in the existing signal system, or installation of signals, were recommended at 61 locations. The work has been completed at 24 of these locations. In addition, the installation of 53 flashing beacons was recommended.

Signs

A total of 193 sign and pavement marking layouts was prepared, which are subdivided as follows:

1. Layouts for new interchanges.....	13
2. Layouts for new intersections.....	10
3. Layouts for existing interchanges.....	6
4. Layouts for existing intersections.....	47
5. Special layouts for reports on traffic studies....	67

In addition to the above, 50 revisions to existing layouts have been made.

Illumination

Lighting of 74 interchanges and intersections was recommended and work at 36 of these locations has been completed.

Traffic Studies

During the course of the year the studies group completed 135 traffic studies, an average of over 11 per month. Two major undertakings were the traffic studies in Burlington and Welland which, although not completed during the period mentioned, engaged the services of an analyst for several months.

Some 47 meetings were held with local municipal and police authorities to discuss Department traffic control recommendations and policies.

A Committee was set up to write a Traffic Field Survey manual and this work is presently well underway.

Characteristics Group

A total of 451 requests for traffic information was processed by the Characteristics Group. These requests originated from the following sources: 382 from inside the Department, 47 from outside the Department and 22 were received from Southwestern Region.

Seven new permanent counting stations were added to the existing network, resulting in a total of 26 stations. Three of the new locations, namely, on new Highway 103, on Highway 17, west of Sudbury and on Highway 11 and 17, west of Nipigon, will improve the coverage in Northern Ontario. Individual hourly counts from some of these permanent counters were processed by the Electronic Computing Centre to determine the distribution of traffic volumes on each lane of multi-lane highways. The facilities of the Electronic Computing Centre were also used to develop hourly curves, providing the group with the factors necessary for the development of design hour traffic volumes.

A special project undertaken during the year was the participation of the Department with various Metropolitan Toronto municipal authorities in obtaining traffic volume counts on a cordon line north of Highway 401 from Highway 27 on the west, Highway 401 to the north and the railway line east of Kennedy Road on the east.

The program in which two vehicle classification surveys are taken each year by the Highway Maintenance Patrols was continued. Results from these surveys have been made available to the Department of Transport. An analysis of truck percentages was also made to determine the relative number of trucks on various types of roadways.

In general, three traffic volume counts were obtained for each significant section of the King's Highway system and Secondary Highway system during

the year. Further improvements were also incorporated in the scheduling of the inventory counting program to enable more counts to be taken during the ensuing twelve-month period. Improved coverage of traffic volume data was obtained at railway crossings to enable the Department to apply protection warrants.

All counts whether taken manually or by machine during 1960 were evaluated and annual average daily traffic volumes calculated. The results are published in the 1955-1960 A.A.D.T. volume book. In addition, the book contains truck percentages on some 600 significant sections of highway, summary tables and details on the traffic volume variations occurring at permanent counting locations such as the range between the lowest and highest months of the 1960 calendar year. A table is also included showing the general trend in traffic volumes for the King's Highway system which indicates that the average rate of increase per year for the five-year period from 1955 to 1960 is a little under five per cent.

Route Analysis

Some 93 requests, all from inside the Department, were processed during the fiscal year in the Route Analysis Group.

The requests necessitated the planning, processing and analysis of 29 origin-destination surveys which involved 154,800 interviews.

Ten of these surveys were full external cordon surveys involving 69 stations and 82,500 interviews in the vicinity of the following centres:—Belleville, Bradford, Brantford, Collins Bay, Huntsville, Midland, Niagara-on-the-Lake, Peterborough, Tillsonburg.

Some 19 partial cordons involving 63 stations and 72,300 interviews were conducted in the vicinity of the following centres:—Amherstburg, Barrie, Brampton, Canboro, Don Valley, Dorchester, Eganville, Footes Bay, Cooksville, Kemptville, Owen Sound, Simcoe, Southampton. Some 600,000 interviews were partially analyzed in connection with the intercentre desire study while a further 22,000 interviews were re-coded.

A highlight of the analyses carried out was the study comparing the relative value of an under or over crossing to the Welland Canal at Welland. A combined report was issued detailing the results of the study.

Survey procedures were written up as instructions for conducting origin-destination surveys and also for carrying out basic analysis of origin-destination surveys.

The abstraction of data from the basic interdesire tabulations was commenced.

The analysis of the Highway 401 study was completed and design guide volumes produced so that the re-design of the highway could proceed.

A pilot study was conducted to appraise the possible deviation of trip distribution in origin-destination surveys at different times of the year.

Initial investigation was conducted into the possible introduction of a co-ordinate coding system.

Advancement has been made in the research into the processing and development of the various techniques used in the Route Analysis Group. Investigation into the use of a mathematical technique for determining the future distribution

of vehicular trips and traffic in urban areas (commenced in 1960) progressed and was reinforced by the development of computer programs for, and in conjunction with, consultants in the Hamilton Area Transportation Study.

The processing of the analysis of origin-destination surveys by electronic equipment will enable a speed-up of bulk work and the basic analysis procedure is now being programmed by the Electronic Computation Section while the trip distribution program developed last year has been expanded for possible use in connection with the gravity model.

Progress through the year has been good insofar that 10 requests of last year's backlog were processed and six more surveys were conducted this year, although less interviews were taken. All data processing of surveys is now up-to-date and every survey recorded in a standard format. The normal processing of field work is becoming routine and therefore tabulations are being received faster. Definite procedures are being developed and written up with a view to publication of a manual. The extra time spent on research and development is advancing the knowledge of personnel in the various fields of traffic assignment and prediction and the results of such knowledge is improved information for design and planning purposes.

It will be the continued aim of the Group to minimize the manual labour on routine processing of data, increase the speed in comparing alternate proposals and improve the various techniques used in traffic engineering. By so doing the usefulness of the reports produced by the group will become more apparent.

By conducting research into the mechanization of the processing of survey data on a realistic basis the group can keep up with the rapidly improving modern techniques and so continue to maintain the reputation of being familiar with the practical application of such techniques.

Traffic Safety

This subsection is responsible for recording and maintaining complete records of the locations of all motor vehicle traffic accidents occurring on the King's Highways. All reports of accidents are recorded and filed by highway location which facilitates the application of accident statistics in traffic engineering studies; the planning and design of highways, etc. Accidents occurring on Secondary Highways, County and Township Roads are also recorded. Also maintained is a record of accidents occurring on streets in municipalities where a King's Highway forms a connecting link or is assumed by the Department.

The compilation of accident statistics includes accident experience records, tabulations of fatalities, injuries, property damage, etc. Accident rates based on vehicle miles of travel are computed for the King's Highways, on approximately 9,300 miles. The manual "Summary of Accident and Fatal Accident Analyses for 1957-58 and 59" was prepared and distributed to senior officials of the Department. Statistics listed in this manual provide a detailed summary of the locations of all reportable accidents occurring on the King's Highway.

During the fiscal year 1960-61, the Traffic Safety Subsection processed 568 requests for motor vehicle accident statistics. The Southwestern Region requested 118 of this number.

As in the past years, monthly fatal accident reports were again prepared indicating locations on the King's Highways where fatal accidents have occurred.

During the calendar year, January 1, 1960–December 31, 1960, 430 fatal accidents occurred on highways maintained by the Department, in which 542 persons lost their lives. Multiple vehicle accidents (79) resulted in 192 deaths or 35.4 per cent of the total (542) persons killed. Drinking drivers and pedestrians were factors in 178 deaths or 32.8% of the number of persons killed in accidents occurring on the King's Highways.

The accident analysis studies which have been completed in the Traffic Safety Subsection have clearly shown the value in developing corrective treatment for existing highways and of even greater importance in establishing future highway needs. We believe that the studies resulting from the accident location filing system are having a beneficial influence on the planning and design of highways in Ontario.

CARTOGRAPHY

C. P. ROBINS, Supervisor

Early in the year maps at a scale of 4 miles to 1 inch of Essex and Kent, and Lincoln, Wentworth, Haldimand and Welland were printed from bases revised in 1959.

Bases were revised and maps printed, at the same scale as mentioned above, of the combination of Carleton, Lanark, Leeds and Grenville and of the single map of Renfrew. The bases for a new county map of the southern portion of the District of Sudbury were completed and work began on the printing of the map.

In each case the printer furnished a white print of the map which was coloured by this section as a guide in placing the various colours.

Towards the end of the year the bases for the combination York and Ontario, and the single map of Bruce, were revised in preparation for printing new maps early in 1961.

Early in the year a plan at a scale of 1 mile to 1 inch of the County of Ontario, commenced in 1959, was completed. New revised plans of the Counties of Lanark, Peel and the central portion of the District of Algoma, at the same scale, were completed. A plan of the County of Simcoe was also started.

Plans of the following townships were re-drawn and brought up to date: Abinger, Airy, Ameliasburgh, Ancaster, Anderdon, Anglesea, Ashby, Athol, Aubrey, Balmertown I.D., Baxter, Belmont, Binbrook, Brighton, Britton, Broder, Buchanan, Burleigh, Burriss, Camden, Cameron, Carpenter, Chatham, Clara, Cramahe, Crozier, Denbigh, Denison, Devlin, Dill, Dryden, Dummer, Effingham, Ennismore, Etobicoke, Fitzroy, Galway, Garson, Glanford, Goulbourn, Haldimand, Hallowell, Harwich, Head, Hillier, Howard, Huntley, Kaladar, Kingsford, Manitouwadge I.D., March, Maria, Marlborough, McIrvine, Methuen, Miscampbell, Murchison, Murray, Neelon, N. Gower, Orford, Osgoode, Percy, Petawawa, Raleigh, Red Lake I.D., Roddick, Rolph, Romney, Sabine, Saltfleet, Sandwich E., Sandwich S., Snider, Sophiasburgh, S. Marysburgh, Thorold, Tilbury E., Tilbury W., Torbolton, Trafalgar, Waters, W. Flamorough, Woodyat, Yarmouth and York.

Plans of the following municipalities were revised and drawn: Acton, Niagara Falls and Orillia.

Work was done on the following miscellaneous jobs:

1. Revising county and township plans to show new highways and new annexations to the various municipalities.
2. Checking county by-laws.
3. Reviewing subdivision plans.
4. Revising surface sheets for use in the section and in the Head Office of the Municipal Roads Branch.
5. Revision of wall maps for the various branches of the Department.

All the tracings of the districts used as patrol maps were revised.

The district boundary maps were newly printed this year. Some new features were incorporated, involving one new colour and one change in tone of a former colour. Two new overlays were made in the section for these new colours. The printing of the district boundary map was checked frequently to make sure of desired colours.

Some preliminary work was done for instituting a new method of making map bases and re-designing the county maps for colour and type.

Many revisions were made on the road map bases in preparation for printing the 1961 road map. New pavements, new King's Highways, Secondary Highways and new place names were shown. All copy for the printer was assembled from the most up-to-date sources. The main additions to the road map were approximately ninety-five new place names, the various Trans-Canada Highway names and a marker on all these routes. The mileage tables were checked and revised in accordance with the highway log prepared by the Statistics and Economics Section. All printed matter was proofread twice and corrections made before the printer was permitted to use the proofs. After the base went to the printers a great deal of checking was carried out to make sure that all revisions would appear on the map.

The leading map companies in the United States were supplied with information concerning new pavements and new highways to bring their Ontario road maps up to date.

PLANNING SERVICES SECTION

Y. ANDERSEN, Superintendent

During the year connecting link agreements were concluded with many municipalities and approximately fifty connecting link construction proposals were received, reviewed, approved and processed. Transfers, designations and assumptions were reviewed and approved. The summary of connecting link construction agreements, transfers, assumptions etc., is provided for inclusion in the appendices of the annual report, originating from other sources. All special building and entrance permits received were dealt with.

Right-of-Way Subsection

This Group performed the following functions:

Property Requests:

Some 500 property requests dealing with the scheduled program were plotted on our linens and reviewed. Three hundred property requests were

either initiated and approved for the Branch and distributed or received from District offices, reviewed, approved and distributed.

Property Sales:

A total of 510 requests to dispose of surplus property were plotted on our plans, reviewed and the necessary recommendations forwarded.

Plans of Subdivision:

In all, 700 new draft plans of subdivision were received and plotted on our plans. Of the total, four hundred were returned to the Department of Municipal Affairs as not affecting this Department and three hundred were reviewed in conjunction with the appropriate district engineer or the Municipal Roads Branch, and considering our future plans, the necessary recommendations were forwarded to the Department of Municipal Affairs.

In addition to the above, this group continued necessary correspondence and reviewal of recommendations dealing with outstanding subdivision applications.

Official Plans:

Approximately 100 new official plans or amendments to existing official plans were received, reviewed and our recommendations forwarded to the Department of Municipal Affairs.

SOUTHWESTERN REGION PLANNING SECTION—LONDON

C. R. HOPKINS, P.Eng., Regional Planning Engineer

The scope of the work in this Section includes program, traffic, planning services and location field surveys.

Location Field Subsection:

This group completed one hundred and sixty-one miles of detail surveys and an additional twenty-five bridge site surveys and eighteen Railway Board site surveys.

Location Draughting Subsection:

The following table shows the work accomplished by this Subsection for the districts in the Southwestern Region, namely, District No. 1 — Chatham; District No. 2 — London; District No. 3 — Stratford; and District No. 5 — Owen Sound.

District	Miles of Detail Plans	Miles of Functional Design Plans	Number of Bridge Site Plans	Number of Railway Board Plans	Number of Miscellaneous Plans
1	27	15	2	4	....
2	7	21	2	6	1
3	14	33	12	1	1
5	33	8	2	3	....
	—	—	—	—	—
	81	77	18	14	2

Intersection Design Subsection:

The designs prepared for the four districts in the Southwestern Region by this group are summarized as follows:

District	King's Highways Channel- izations	County Road Designs	Commercial Site Entrances	Patrol Yard Designs
1	5	4	18	2
2	6	1	12	1
3	1	....	5	3
5	1	....	5	1
	13	5	40	7

Traffic Subsection:

During the year this group prepared 15 major and 32 minor Traffic-Control Studies, 12 Speed-Zoning Studies (covering 370 miles) and five Intersection Sign Layouts.

In general, pattern traffic volume counts were obtained three times for all highways in this region.

Miscellaneous:

Some 72 property sales were processed by this Section during the fiscal year.

ROAD DESIGN DIVISION

H. D. McMILLAN, P.Eng., Road Design Engineer

D. W. FARREN, P.Eng., Assistant Road Design Engineer

The fiscal year 1960-61 saw the sudden passing of D. G. Ramsay, road design engineer, and J. C. Loudon, special projects design engineer. The wealth of experience and amicable disposition of these men were sadly missed.

H. D. McMillan, assistant road design engineer, moved into the position of road design engineer; D. W. Farren, a former senior engineer in Road Design, was transferred from the Operations Branch to the position of assistant road design engineer.

The number of projects pre-engineered, computed and checked was 171. These projects consisted of 580 miles of grading, drainage, granular base and paving, 250 miles of paving only, and 100 structures. Of the above totals, work on Highway 401 accounted for 39 projects consisting of 98 miles of grading, drainage, granular base and paving, and 36 structures. Other major projects on which work was carried out by the Road Design Division included the Homer Skyway, Highway 405, a new dual highway which will link the Queen Elizabeth Way at St. Catharines with the new international bridge at Lewiston, and Highway 403, the expressway connection into the city of Hamilton.

Detailed drawings of 36 channelizations, 17 two-leg cloverleaves, and 9 interchanges were produced by the Intersection Detail Design Group.

Approximately 325 miles of projects were processed through the Electronic Computing Centre. In addition to many improvements being made to the existing program for quantity calculations by means of electronics, a new program was developed for the calculation of profile grade elevations and edge of pavement elevations, taking into consideration the horizontal and vertical alignment. A study was made on the feasibility of using the electronic computer for the calculation of alignment data for intersections, particularly cloverleaves, and as a result, alignment for cloverleaves of conventional design can now be computed electronically. A further advancement in this field was made when two preliminary

quantity estimates were computed electronically using cross-sections produced by photogrammetric means.

Further use was made of the electronic computer when a new program was developed for calculating and graphically illustrating the scheduled work load for each of the regions. In this connection, research was completed on the subject of "Estimating Personnel Requirements for Highway Design." The results of this research generated considerable interest within and outside of the Department, and as a result, D. W. Farren, assistant road design engineer, was invited to present a paper on the subject at the Highway Research Board annual meeting in Washington, D.C.

D. Bews, drainage engineer, presented a paper on "Highway Drainage" at the annual meeting of the Association of Ontario Land Surveyors, held at Windsor.

Revisions and up-dating of the Estimating Manual and Highway Standards was carried out. Many favourable comments were received from highway authorities in other provinces, and from consulting engineers on the value of these publications to engineers and technicians engaged in estimating, design and construction of highways. During the year, a committee was formed for the preparation of a "Geometric Design Manual for Ontario Highways." Active participants from the Road Design Division on this committee were D. W. Farren, assistant road design engineer, C. C. Yuill, design services engineer, and P. Wong, highway standards engineer.

BRIDGE DIVISION

A. M. TOYE, P.Eng., Bridge Engineer

The activities of the Bridge Division can be summarized under the five sections into which the Division is divided.

Bridge Planning

This section is responsible for the investigation and approval of all proposed structure sites. The work is carried out by 3 bridge location engineers and 1 bridge location supervisor who work on a regional basis although not as yet established in regional offices.

During the year, 107 scheduled structure sites were studied and approved. In addition, 15 sites for proposed municipal structures and 5 sites on resources and access roads were investigated.

The hydrology subsection consisting of 2 engineers and 1 draughtsman was extremely busy. Forty-nine hydrological investigations were made and reports prepared on highway structure sites as well as 54 on municipal roads. In addition, 28 cases of serious flooding were investigated.

The section also assisted the Department of Lands and Forests with advice on bridge sites on roads under their jurisdiction.

Bridge Design

During the year there were 151 designs started and 176 designs completed.

DESIGNS STARTED		DESIGNS COMPLETED	
By D.H.O. Designers.....	96	By D.H.O. Designers	88
Special Designs by D.H.O.....	26	Special Designs by D.H.O.	26
By Consultants.....	29	By Consultants.....	62
TOTAL DESIGNS.....	151	TOTAL DESIGNS COMPLETED ..	176

Included in these was the design of the Spanish River Bridge at Massey. This is the largest all-welded, three-span, continuous-girder designed in the Department to date.

The design for the new structure over Highway 401 at Ajax was an example of the use of precast, prestressed "U" shaped deck members which could be erected over a busy highway with a minimum of interference with traffic. This design appears to be the best solution to the problem of building structures over existing highways without the necessity of building a paved detour.

Included in the Special Designs were the designs of Timber Culvert Standard and the devising of a new pole-type foundation for overhead signs.

The year was marked by a great increase in the use of prestressed concrete and by a definite trend toward all-welded, steel-plate girder designs in place of conventional rivetted structures. Consulting engineers were retained to study and report on the feasibility of a tunnel under the Welland canal at Welland. Work was also begun on a \$3,000,000 high-level bridge over the Bay of Quinte.

The year also saw steadily increasing use of the computer service. Some 1,439 structural problems were processed through the computer. We now have 25 computer programmes in use, 14 of which were developed during the past year. Twelve additional programmes are currently under development.

During the year the section completed the first draft of a new design specification to replace the 1935 specification.

Bridge Control

Contracts, estimates and special provisions were prepared for 163 structure contracts with a total cost of \$24,403,724.

These contracts included the following:

111 General contracts with a total value of.....	\$14,486,712
35 Structural steel contracts totalling 23,278 tons.....	9,314,330
2 Prestressed concrete contracts.....	87,922
15 Contracts for culverts, cribwalls, retaining walls, pier de-icing, approach slabs.....	514,760
TOTAL.....	\$24,403,724

During the year, 920 bridge material requisitions were prepared specifying the quantity and quality of items costing some \$4,187,000.

These requisitions covered a great variety of materials including 11,300 tons of reinforcing steel, 273,000 feet of piling and 22,000 feet of steel handrailing. Arrangements were also made to have these materials inspected by private companies specializing in this work.

In addition to their regular duties such as calculating bridge quantities for tender and final payment purposes, preparing perspective drawings and miscel-

laneous draughting, the draughting group carried out 5 hydrology surveys and field measurement on 25 bridges.

The construction engineers of the Control Section continued to provide assistance to the Operations Branch in the form of technical supervision of specialized operations. Included in this was the approval of contractor's proposed falsework plans and field inspection of erected falsework, supervision of pile load tests and pile-driving operations when requested, supervision and erection of all structural steel bridges, supervision of casting, stressing and erection of prestressed concrete beams, and assistance in solving numerous field problems as they arose.

The Control Section continued to review the construction specifications and made necessary revisions to keep it up to date.

Municipal Bridge Liaison

This section was required to examine and approve of plans and specifications for 198 bridges, 417 culverts and 37 maintenance buildings proposed for municipal roads. The bulk of the design was done by consultants, some 65 of whom were retained to design 75% of the bridges and 50% of the culverts. Co-operation between the Municipal Roads Branch, the County Engineers, the Consulting Engineers and the Municipal Bridge Liaison Section remained at a high level.

The bridges were of all types and varied in length from 20 feet to 400 feet. A single leaf Bascule bridge at Wallaceburg and a double leaf Bascule bridge at Chatham were among the unusual types of structures processed. The use of prestressed concrete is also growing in the municipal field.

The work of checking and approving plans for 2 major Metro projects is still continuing. These are the Gardiner Expressway and the Don Valley Parkway.

During the year the Section also investigated and recommended approval of 16 by-laws restricting the loads on county and township bridges.

Engineering Office Supervision

This section was responsible for the filing and typing duties of the Division; for the maintenance of records and statistics; for personnel administration; for the preparation of technical reports; and for miscellaneous technical duties.

Progress was made on the installation of a completely new filing system designed for ready identification of each structure site. The system will cover King's highways, secondary highways, tertiary highways, access and resources roads and municipal roads.

Summary of Bridge Construction

During the calendar year 103 structures consisting of some 20,277 feet of bridging were completed. Included in these were 14 railway overheads — 7 over the Canadian National Railway, 6 over the Canadian Pacific Railway and 2 over the Grand River Electric Railway. In addition to these, one subway was constructed to carry the Algoma Central and Hudson Bay Railway over Highway 17 (T.C.H.).

There were 15 structures constructed on the Trans-Canada Highway.

The Agawa River bridge on Highway 17 between Wawa and Agawa was completed. This is a steel through truss with a span of 320 feet.

The Otonabee River bridge on Highway 7 was completed. This is a steel-plate girder bridge over 950 feet in length.

A bridge over White Lake Narrows on Highway 17 was also completed. This is a steel-plate stabbogen arch (steel plate girder stiffened with a light arch) with a span of 275 feet and two 90-foot approach spans.

A wide range of types and designs were included in these 103 structures completed; 37 are structural steel bridges, one a timber bridge and 65 are reinforced concrete, 4 of which are prestressed. A complete listing of all structures is given in Appendix No. 4.

Not included in this listing are 220 concrete culverts in spans ranging from 4 to 20 feet and costing \$977,000.

SERVICES BRANCH

C. A. ROBBINS, P.Eng., *Director of Services*

H. S. HOWDEN, O.L.S., P.Eng., *Assistant Director of Services*

The Services Branch has increased from eight to nine sections. The Services Managers Section was added during the year, primarily for administrative reasons.

The Services Branch through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the Department.

The nine sections of the Services Branch are:— 1. Regional Services Managers; 2. Documents; 3. Equipment; 4. Land Surveys; 5. Office Services; 6. Property; 7. Special Services; 8. Supply; 9. Tenders.

Documents Section

H. A. Broom, Superintendent

During the fiscal year 1960-61, its first complete year of operation, the Documents Section, embracing the four basic groups, correspondence files, plan files, library and manuals, expanded the area of its function to a significant degree.

By a realistic application of a policy of retention and disposal, 600 additional square feet were made available as filing space. By this procedure, documents on file for ten years are generally microfilmed and the originals are delivered to the Office Services Section for disposal. The Section, in addition to coding and indexing correspondence, now also indexes the majority of the plans it receives.

The facilities for research afforded Department personnel by the library have been increased to a marked degree through the acquisition of new volumes and by selective subscriptions to technical periodicals. Starting from no more than a few scattered volumes and an inspiration, the library is rapidly being organized into an institution commensurate to the Department it serves. The Manuals Group performed its normal function of editing and revising manuals, circulars, articles, brochures, etc.

Equipment Section

L. Westlake, Superintendent

The Equipment Section, through its Head Office and Field Supervisors, continued during the past year with the preparation of specifications, inspection of all major equipment purchased, development of new machines, the supervision of maintenance of all departmental equipment.

It operated two garages, the Tree Saving unit, the Pavement De-Slicker, the Well Testing unit and the Mobile Mechanical Training School.

The section produced five trailers for D.H.O. exhibits at fall fairs and worked with the Deputy Minister's office on the production of exhibits which were displayed at 38 fairs throughout the Province.

The Head Office Garage (District 42) checked, serviced and when necessary, modified all new equipment before delivery to the field.

One new dual-lane zone striper was built and three single-lane stripers were modified by the Section.

The Equipment Study Committee visited the Cochrane district and the asphalt plant located there. The Section further provided members to sit with the Vehicle Accident Committee, the Instrument Evaluation Committee and the Equipment Stock Analysis Committee.

The ferry *Cassiopeia IV* (ex. *Alice M*) was moved by rail from White River to Cochrane, modified, and is now in service on the Abitibi River.

Land Surveys Section

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section is responsible for making all land surveys and for the preparation and registration of all plans required for the acquisition or disposal of land and for the assumption, reversion, designation and closing of highways.

The Section obtained registration of 3,211 plans in the proper Land Titles or Registry Offices during the year.

During the fiscal year, 238.85 miles of highway were designated as controlled-access highways. This figure includes Highways 27, 400 and the Queen Elizabeth Way, and diversions in Southern and Northern Ontario, which were revised and consolidated. The total mileage of controlled-access highways in the Province now stands at approximately 1,364 miles. Thirty-four interchange areas were designated as controlled-access highways. No mileage was added to the figures quoted above for these areas. The details appear in an Appendix to this report. Also during the year, 109 miles of streets connecting parts of the King's Highway or Secondary Highways through numerous cities, towns and villages were designated as Connecting Links. Connecting Link Agreements covering 72.5 miles of streets were entered into with municipalities.

Three training courses were conducted for Land Surveys Section staff during the year, one course for field personnel and two courses for draughtsmen. These courses were attended by 54 candidates, 34 of whom qualified. In addition, 234 employees tried qualifying examinations without attending a course and 132 passed. The Section is continuing its apprenticeship program to qualify employees as Ontario Land Surveyors and during the past year, three apprentices successfully passed the final examinations.

In order to expedite the calculations necessary for the preparation of legal survey plans, 535 jobs of various lengths were processed through the I.B.M. 650 Electronic Computer. The information for the calculations is submitted in code on forms designed by Land Surveys personnel in conjunction with the personnel in the Computing Centre. A detailed procedural guide has also been prepared by these employees outlining the proper method for processing the various types of mathematical problems encountered.

Field tests were conducted with a recently developed electronic measuring survey instrument called the Tellurometer, which measures distances with speed and accuracy. This instrument was acquired for the use of the Department of Highways and allotted to Land Surveys Section. As a two-way communication system is a necessity in the successful operation of the Tellurometer, the Department obtained approval from the Federal Department of Transport to operate

the equipment on a designated radio-wave frequency band. To be used in conjunction with the Tellurometer, a Wilde T-2 Theodolite was obtained. This is an instrument which reads angular measurements accurately to one second. A specially trained crew from Land Surveys Section are carrying out surveys with these instruments. These precise surveys will be done to establish a control for future highway surveys with a view to including them in the ever-expanding geodetic network in the province.

Appendices in this Report give details of controlled-access highway plans and designations and reversions of sections of the King's Highway and Secondary Highway systems.

TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
Plan Types A-H Inclusive—Acquisition of Lands			
"A"	Land Plans.....	2,131	386.880
"B"	Amended Land Plans.....	159	21.660
"C"	Land Plans Acquiring Limited Interest.....	43	2.895
"D"	Plans of Abandonment.....	84	13.648
"E"	Crown Land Plans.....	185	220.778
"F"	Amended Crown Land Plans.....	4	.....
"G"	Crown Land Abandonment Plans.....	5	3.566
"H"	Navigable Waters Protection Act Plans (Crown).....	7	.270
Plan Types I-M Inclusive—Assumption of Existing Highways			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway.....	7	26.560
"J"	Amended Preliminary Assumption Plans.....	1	.....
"K"	Assumption Plans (Replacing).....	163	304.345
"L"	Assumption Plans.....	72	41.025
"M"	Amended Assumption Plans.....	10	2.430
Plan Types N-P Inclusive—Designation of Highways			
"N"	Proposed Highway Plans.....	29	59.920
"O"	Highway Plans.....	121	465.005
"P"	Controlled-access Highway Plans.....	21	58.342
Plan Types Q-T Inclusive—Transfer and Closing of Highways			
"Q"	Reversion to Road Authority.....	7	6.970
"R"	Transfer to Municipality.....	60	40.357
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council.....	47	21.070
"T"	Road Closing Plans (Ontario Municipal Board).....	11	10.400
Plan Types U-X Inclusive and Others—Miscellaneous and Special Plans			
"U"	Plans to Illustrate Descriptions.....	537	130.770
"V"	Survey Plans of Boundaries — Supplementary.....	181	161.445
"W"	Indian Affairs Plans.....	2	4.025
"X"	Connecting Link Descriptions and Agreements:		
	(Designation).....	54	108.950
	(Agreement).....	63	72.500
	Miscellaneous Plans.....	94	90.166
TOTALS.....		4,098	2,253.377

Office Services

F. C. W. Flegg, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery, and medical supplies, for the distribution of these to all districts, branches and sections of the Department. During the fiscal year, Office Services processed 22,378 requisitions.

The reproduction whiteprint unit, under the supervision of Office Services, produced 2,477,212 lineal feet of whiteprint during the fiscal year.

Office Services is responsible for providing postal service to all Department of Highways Offices in the Metropolitan Toronto area. In addition, it provides guide service in the Downsview buildings.

During the fiscal year, 3,106,118 copies were microfilmed, in Office Services retention and disposal unit. In addition, a microfilming mobile unit has been operating in the districts with encouraging results.

Office Services Section, having been assigned the responsibility of administering the teletype service in the Metropolitan area, which connects Head Office with all district and regional offices, operated this facility satisfactorily during the fiscal year.

Property Section

H. Barry, Superintendent

1. FUNCTION

The Property Section is responsible for the acquisition of all property and/or property rights required for highway purposes, and for the settlement of claims to compensation arising therefrom. Additionally, the Section is responsible for the management and ultimate disposal of surplus property arising from its acquisition function.

The number of agreements negotiated in the fiscal year totalled 4,057, of which 544 were damage claim releases. The number of agreements which were paid in full during the fiscal year totalled 4,579. Property payments amounted to \$7,744,699.39.

Revenue derived from sale of surplus property totalled \$982,913.66 as compared with \$1,310,045.64 in the previous fiscal year. An amount of \$287,699.93 was received from the leasing of properties.

During the past year, the Section conducted two appraisal courses, and at present, all but five Property Agents have completed this course.

Special Services Section

F. E. Cavell, Superintendent

The Special Services Section is established to review and consolidate the building requirements of the Department; allocate office space for Department use; prepare architectural plans; recommend building designs; supervise the installation and expansion of communication services; and act as liaison between the Department of Highways and the Department of Public Works in all matters pertaining to buildings and building sites either occupied or required by the Department of Highways.

A constant study of the problem of space allocation within the buildings at Downsview is being maintained in an effort to utilize as efficiently as is possible the existing facilities.

The mobile radio systems, adopted for Department use, have given excellent service by providing the fast system of communications essential for effective winter maintenance.

The Section completed an investigation of facsimile equipment, a study which suggested the possibility of future use of this type of equipment by the Depart-

ment for electronic reproduction of messages, etc. which have been transmitted either by ground wire or radio.

A survey of closed circuit television disclosed the further possibility that this medium of communication might, in future, be adaptable to the needs of the Department.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section is the material procurement and distribution agency of the Department. This function includes the purchase of construction and maintenance equipment and materials and the establishment of procedures which govern the distribution and accounting of these materials. It includes the operation of central stores at Downsview and a complete Bailey bridge supply service.

Activity continued through the year in the Bailey bridge supply field. Courses of instruction were held at each of the five regional depots and over 100 Department and municipal employees received instruction in the maintenance and erection of this type of bridging. The rehabilitation and testing program continued to show progress. During the year 1,000 tons of materials were cleaned, repaired, tested and painted. Some 50 bridges were erected this year, and 40 structures, having served the purpose for which they were erected, were dismantled and the material returned to depot inventory. At March 31, 1961, there were 143 Bailey bridges in use on the highways throughout the Province.

Total inventory of Bailey Bridging owned by the Department is now slightly in excess of 8,200 tons.

Supply supervisors continued their scrutiny of district materials and parts inventories and the instruction of stores personnel. Qualifying examinations were held for supply supervisors and of a total of 69 employees writing the tests, 55% attained the required pass mark.

The Supply Section arranged and conducted 212 sales to dispose of surplus and obsolete equipment and materials. The revenue received from this source totalled slightly over \$238,000.00. Most used equipment was sold at public auction, a method which has proven most adaptable to this type of sale.

Tenders Section

W. T. Whittle, Tenders Secretary

The Tenders Section is responsible for the processing of tenders on D.H.O. engineering projects, property sales, material and equipment purchases, and obsolete equipment and material sales.

This Section also arranges all public tender openings for engineering projects and advertised supply contracts. In addition, tendering information and forms are supplied to contractors, potential property sale bidders and firms requiring tendering material on D.H.O. purchases of heavy and automotive equipment.

The office is responsible for ensuring that all tendering procedures are followed, and that recommendations for alterations are made where inadequacies are found or revisions are required. It is also responsible for placing tender call and

award advertisements and for the processing of accounts in this connection. Where fees are levied for tendering material the Section is responsible for the collection and proper accounting of such fees. In addition, the Section collects fees for, and distributes the manual dealing with "Specifications and General Conditions of the Contract." Revisions to this manual are automatically forwarded by the Tenders Section to all purchasers.

During 1960 the Tenders Section assisted the International Bridge Authority of Michigan in the calling of four contracts for the Sault Ste. Marie International Bridge. The Section was responsible for the placement and payment of advertisements, the distribution of tendering material and the collection and refund of applicable fees.

A procedure for the public opening of tenders on advertised "Supply" Contracts was approved in September, 1960, and put into operation in November, 1960.

During the period April 1, 1960 to March 31, 1961, a total of 5,050 tenders, representing approximately 45% of the total tenders submitted, were received and recorded at the Queens Park post office by the Tenders Section representative delegated for that purpose.

During the 1960-61 fiscal year the Tenders Section issued to newspapers 1,603 "Advertising Orders" authorizing the placement of some 2,100 advertisements. Total cost approximated \$78,000.00.

Tenders were called as follows:

(a) *Engineering Contracts*

Contracts processed.....	354
Contracts awarded.....	348
Tendering material released (tender forms only).....	38,271
Tendering material released (plans, profiles, etc.).....	4,428
Net tenders processed.....	2,608
Average number of bids per contract.....	7.36

(b) *Engineering Contracts — Invitation Bids.* (These are contracts called in an Emergency where the estimated cost is less than \$10,000.)

Invitation contracts processed.....	28
Tendering material released.....(sets)	169
Net tenders processed.....	91
Average number of bids per invitation contract.....	3.25

(c) *Property Sale Transactions (Public Tender)*

Sales processed.....	11
Net tenders processed.....	13
Average number of bids per sale.....	1.18

(d) *Material Requirements*

Supply contracts and enquiries processed.....	1,676
Net Tenders processed.....	8,421
Average number of bids per Enquiry.....	5.02

(e) *Obsolete Material Sales* (Public Tender)

Number of sales processed.....	51
Net number of tenders processed.....	185
Average number of bids per sale.....	3.63

Regional Services Managers' Section

C. A. Robbins, Director of Services

Under the direction of Mr. C. A. Robbins, Director of Services, the Regional Service Managers are responsible for co-ordinating and expediting the work of the various sections of the Services Branch in their respective regions. The Regional Services Manager ensures that the policies and the directions of the Section Heads are carried out by the staff of the Services Branch in his region.

PERSONNEL BRANCH

J. POGUE, *Director of Personnel*

The Personnel Branch administers the selection and engagement of personnel, staff movements, training, organization and classification, personnel records, the staff establishment of Branches and the departmental safety program.

Recruitment Section

It is the responsibility of the Recruitment Section to consult with branch heads and district engineers to determine employment requirements and then carry out the necessary recruitment and selection program. This Section also arranges transfers within the Department and also transfers to and from other departments.

From April 1, 1960 to March 31, 1961 there were 4,268 replacements and additions to staff. This figure includes 2,928 seasonal workers and 445 students.

The Recruitment Section hired 350 persons, the remainder of those hired being recruited locally by the regional and district offices. The staff engaged by the Recruitment Section was allocated as follows:—

Administration Branch.....	26
Legal Branch.....	5
Personnel Branch.....	13
Services Branch.....	130
Financial Comptroller's Branch.....	23
Chief Engineer's Branch.....	61
Planning and Design Branch.....	90
Municipal Roads Branch.....	2
TOTAL.....	350

The staff of the Recruitment Section, during this period, conducted 2,861 interviews with applicants for employment and in addition conducted many counselling interviews.

The graduating classes in civil engineering at Toronto and Queen's Universities and the University of Western Ontario were interviewed early in the year. No difficulty was experienced in filling our requirements for 1961.

Competition letters were circulated throughout the Department describing positions of a senior nature as they became vacant, inviting qualified members of the staff to apply.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

As at the end of the fiscal year the Department's work force was 12,433 and was distributed as follows: (The figures for the fiscal years 1958-59 and 1959-60 are also shown for the purpose of comparison).

	1960-61	1959-60	1958-59
Deputy Minister's and Administration Branch.....	251	274	240
Financial Comptroller's Branch.....	255	297	277
Services Branch.....	1,276	1,261	1,250
Planning and Design Branch.....	1,019	1,030	1,039
Operations Branch.....	9,499	9,672	9,994
Personnel Branch.....	47	49	65
Municipal Roads Branch.....	47	100	94
Legal Branch.....	39	.....	.....
TOTALS.....	12,433	12,683	12,959

The total work force of 12,433 includes salaried and hourly-rated and was grouped as follows:

	1960-61	1959-60	1958-59
Permanent and temporary staff.....	5,333	4,671	4,185
Casual staff and seasonal employees.....	7,100	8,012	8,774
TOTALS.....	12,433	12,683	12,959

By occupation the employees were grouped as follows:

	1960-61	1959-60	1958-59
Clerical and stenographers.....	1,953	1,993	2,030
Graduate engineers.....	361	376	379
Engineer's assistant.....	2,569	3,000	2,742
Draughtsmen.....	660	677	691
Skilled and unskilled labour.....	5,852	5,834	6,412
Others.....	1,038	803	705
TOTALS.....	12,433	12,683	12,959

During the year 23,907 personnel transactions were carried out by the Personnel Branch. These were as follows:

	1960-61	1959-60	1958-59
New appointments.....	4,268	6,910	4,814
Terminations.....	4,628	7,186	3,620
Salary and other record changes.....	15,011	27,408	8,813
TOTALS.....	23,907	41,504	17,247

Organization and Classification Section

This section is responsible for the administration, throughout the Department of the classification and salary plan established by the Civil Service Commission. It is responsible for the administration of a similar departmental program governing the casual employees.

It is also responsible for the program of appointment to the permanent staff of temporary and casual employees.

The section also provides, through its regional and branch representatives, advice and guidance to supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to the individual employees.

The most significant development during the 1960-61 fiscal year was the approval by the Civil Service Commission of the Department's proposals affecting the classes and salaries of the positions within our district maintenance organizations. This proposal was made by the Department, after a lengthy study, during the previous fiscal year.

As a result of the Commission's approval, the classes and salaries of a large number of employees were adjusted, and many problems were solved.

The Department's recommendation for the establishment of a class series covering the positions of our highway construction inspectors was also approved, as was our recommendation favouring the establishment of classes for our senior ferry captains.

The processing of the class and salary changes brought about by these revisions placed a considerable work load on the section, as these changes were additional to the normal annual, and semi-annual merit salary increases which were also processed for nearly all eligible employees.

Similar changes were processed for many employees in the maintenance trades classes, as a result of revisions instituted by the Civil Service Commission.

The work of our regional and branch personnel representatives continued most successfully, and many minor problems were settled by them, as a result of the provision to supervisors of advice concerning organizational matters, the interpretation of the Public Service Act and Regulations, departmental directives and regulations and other related matters.

Many employees were provided with counselling on a variety of matters, some governed by policy and regulations, but others being of a personal nature.

As a result of these activities many problems were resolved whilst still in the early stages.

The section reviewed the qualifications and regulations governing the various classes of highway equipment operators, and, as a result of discussions with the Operations and Services Branches, revised requirements were authorized.

A standardized organization for the District Engineering Office Supervisors' Section was developed in conjunction with the Operations Branch, and progress was made in ensuring its adoption in each district.

The processing of appointments to the permanent staff of the Department continued at a high rate.

Training Section

This section is responsible for establishing and maintaining training courses as required for the more efficient operation of the Department.

Most of the training courses conducted by the Training Section took place during the fall and winter months when the reduced construction program enabled employees to attend courses.

During the period from April 1, 1960 to March 31, 1961, the following branches conducted training courses, the number and extent of which indicates the magnitude of the Department's training program.

Branch	Number of Courses	Number of Candidates Taking Courses
Services.....	54	698
Planning and Design.....	8	169
Chief Engineer's — Operations.....	19	480
Financial Comptroller's.....	1	21
Personnel.....	3	37
TOTALS.....	85	1,405

In conjunction with these courses, promotional examinations for chainman to rodman, survey technicians 1 to survey technicians 2, junior computers, supply supervisors, accounting supervisors and bodyman mechanics, were held in the district and regional offices by the Chief Engineer's Branch — Operations, the Planning and Design Branch and the Services Branch, in which a total of 579 employees took part.

The Services Branch mobile training unit was successfully used in training and testing automotive mechanics in various districts during the year. The unit was also used in the districts for training courses in accident prevention and safety.

The Supply Section conducted Bailey Bridge erection courses in the regional offices. Among those attending were 22 municipal employees.

The Materials and Research Section, Operations Branch, conducted six courses for county and township municipal employees in asphalt, grade and concrete inspection with a total of 131 municipal employees attending.

This section is also responsible, under the direction of the training committee, for the co-ordination of the engineers-in-training program in which selected junior professional engineers undergo a systematized job rotation program to bring them to the point of greatest usefulness to the Department in the shortest possible period of time.

As mentioned previously 1,405 personnel received training in departmental courses during the year. Some of the courses that were held were as follows: —

Rodman to junior instrumentman courses, junior instrumentman to instrumentman courses, advanced asphalt, concrete and grade inspector courses, inspector 2 to inspector 3 courses, municipal road auditor's course, junior draughtsman to draughtsman 1 courses, draughtsman 1 to draughtsman 2 courses, property appraisal courses, automotive mechanic courses, estimator's course and other similar courses.

Where it is found that specialized training will be advantageous in the performance of the Department's work, subject to the approval of the Civil Service Commission, selected employees are permitted to attend specialized courses not conducted by the Department.

The Department's training program has proved to be very successful in overcoming the shortage of qualified personnel and has not only improved the quality of work but also the morale of the staff and has helped to reduce employee complaints and grievances.

Department Council System

The Departmental Council convened for nine meetings in the period from April 1, 1960 to March 31, 1961. The council system was reviewed and a more uniform establishment was set up which has given a more effective coverage of all the various branches. With this re-organization twenty-eight branch councils were established.

Elections took place throughout the district and branches in accordance with Regulations made under the Public Service Act.

The active operation of the Branch Councils made for a very successful year for the Departmental Council and many firm recommendations were made and approved at the Joint Advisory Council level.

The Departmental and Branch Councils, as the Deputy Minister's designated representatives, heard grievances and complaints presented by employees.

The Departmental and Branch Councils were a contributing factor in the successful campaigns held for the United Appeal and the Canadian Red Cross Blood Donors Clinic.

Safety Section

The frequency rate of lost time injuries was reduced again for the second year in a row.

A safety procedure was issued to all districts outlining the procedure to be followed when completing the supervisor's accident report and the safety hazard report. The Districts were also required to form safety committees and hold meetings each month to discuss motor vehicle accidents, personal injuries, first aid training, fire fighting equipment, etc.

It was decided to change the colour of hats and sleeves from red to blaze orange. This is a fluorescent colour which shows up brighter on dull, overcast days than the red previously used. Fewer people are colour blind to this colour than red. Therefore, there is less chance of motorists hitting our personnel working on the road because they could not see them. For added protection a blaze orange vest is being supplied to all flagmen, all instrumentmen and all members of the origin-and-destination surveys.

A safety training course was started in January at Chatham and will be given to Highways personnel in all districts, sections, regions and to engineers-in-training and graduating engineers.

Safety inspections were carried out in the Districts with a copy of the inspection report for each district being forwarded to the district engineer for action.

Each month copies of the safety report, equipment accident report, posters and safety bulletins were issued. Copies of the flagging pamphlet were issued to the districts and sections for use by their flagmen, and a pamphlet on how to prevent backing-up accidents was issued to the districts and sections for use by the equipment operators and vehicle operators.

The Department held a safe driving rodeo in each district, with a final run off being held at Downsview, and the award banquet was held at the Regency Towers with the Deputy Minister of Transport, Mr. D. Collins, and the Deputy Minister of Highways, Mr. W. J. Fulton, in attendance.

All equipment operators were entered in the Ontario Safety League and those who drove without having an accident in which they were found to be fully or partially responsible received a safe driving award badge.

MUNICIPAL ROADS BRANCH

J. V. LUDGATE, P.Eng., Municipal Engineer

J. P. HOWARD, P.Eng., Assistant Municipal Engineer

Municipalities in the year 1960 generally found it necessary to increase road expenditures which automatically resulted in increased aid from the Province.

The following table gives an indication of trends over the past eight years:

Expansion of Aid to Municipalities (in \$1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1953	\$ 54,452	\$27,190	\$1,759	\$28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,411	62,412	7,880	70,292
1960	140,438	70,444	8,135	78,759

SUBSIDIES SECTION

P. D. PATTERSON, P.Eng., Subsidies Engineer

Subsidies were distributed to 973 municipalities and 31 Indian Reserves.

The following table summarizes the total expenditures and subsidies paid:

Corporation Status	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metropolitan	303.2	\$ 26,600,000.00	\$ 26,349,495.54	\$ 13,174,747.77
County*	9,492.5	34,693,350.00	32,090,731.87	17,613,395.23
Township†	50,962.5	48,204,231.69	45,098,684.79	25,150,102.14
Urban	8,557.7	45,978,264.00	36,899,762.02	14,506,072.66
TOTALS	69,315.9	\$155,475,845.69	\$140,438,674.22	\$ 70,444,317.80

* Includes Suburban Road Commissions.

† Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

Under authority of the Municipality of Metropolitan Toronto Act, subsidies are paid by the Department on expenditures made on roads under the jurisdiction

of the Municipality of Metropolitan Toronto. Breakdown of 1960 expenditures is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$19,876,223.84	\$ 1,577,279.50	\$21,453,503.34
Bridges and culverts.....	3,047,077.57	151,446.33	3,198,523.90
Winter control.....		1,697,468.30	1,697,468.30
TOTAL APPROVED EXPENDITURE	\$22,923,301.41	\$ 3,426,194.13	\$26,349,495.54

In addition to normal maintenance of Metro Roads System, the following works were carried out or initiated in 1960:

Structures completed	22
Structures under construction	4
New roads completed -- (Don Valley Parkway).....	2.10 miles
New roads under construction -- (Don Valley Parkway)...	5.25 "
Existing roads reconstructed -- (Don Valley Parkway)...	0.43 "
Pavement widening completed.....	9.56 "
Resurfacing of gravel roads	1.25 "
Pavement widening under construction.....	1.20 "
Resurfacing of pavements.....	9.75 "
Intersection improvements.....	16
Major repairs to bridges.....	1
Major repairs to bridges under construction.....	1

COUNTY ROADS

(Part VII, The Highway Improvement Act)

Expenditures on County and Suburban Roads systems are summarized below:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$16,766,550.48	\$ 7,429,125.21	\$24,195,675.69
Bridges and culverts.....	4,992,373.36	234,390.99	5,226,764.35
Winter control.....		2,668,291.83	2,668,291.83
TOTAL APPROVED EXPENDITURE	\$21,758,923.84	\$10,331,808.03	\$32,090,731.87

Principal items of work carried out during the year on county and suburban roads systems are summarized below:

Construction Items:

1. New or rebuilt gravel and stone surface.....	441 miles
Low cost bituminous surfaces.....	202 "
Pavements.....	198 "
COMPLETED ROAD CONSTRUCTION.....	841 miles
Graded to standard cross section.....	310 "
2. Bridges (10' span and over) -- Concrete, 120; Steel, 21; Timber, 2.	
TOTAL.....	143
Culverts (under 10' span) -- Concrete, 72; Metal Arch, 99; Wood, 1.	
TOTAL.....	172
Pipe culverts installed	3,003

Maintenance Items:

1. Roadside ditching.....	320 miles
Bituminous surface treatment.....	460 "
Dust laying with oil.....	406 "
Dust laying -- calcium chloride	2,051 "

Clay gravel stabilization.....	158	"
Resurfacing — Pit-run gravel.....	165,785	cu. yds.
Crushed gravel.....	654,720	"
Crushed stone.....	137,378	tons
2. Winter control — Snow removal.....	9,540	miles
Snow fence.....	1,667	"
3. Weed and brush control — By spraying.....	6,203	"
By cutting.....	5,334	"
4. Bridges repaired.....	119	
Culverts repaired.....	385	

Additional details regarding county road mileages, types of surface, expenditures and subsidies appear in Appendices to this report.

COUNTY SUBURBAN ROADS

(Part VIII, *The Highway Improvement Act*)

Thirty-four suburban road commissions have to do with a specified mileage of roads leading to and from the cities and separated towns. Particulars concerning their 1960 operations are summarized below:

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	35.00	\$ 269,868.75	\$ 144,409.64
Carleton.....	Ottawa.....	109.07	683,225.21	353,818.65
Elgin.....	St. Thomas.....	27.80	62,301.35	31,218.66
Essex.....	Riverside.....	4.00	20,406.29	10,203.16
	Windsor.....	49.00	268,774.59	141,786.00
Frontenac.....	Kingston.....	43.60	131,777.47	75,144.48
Grey.....	Owen Sound.....	34.70	37,165.58	18,849.41
Hastings.....	Belleville.....	14.50	47,573.72	24,594.31
Kent.....	Chatham.....	24.35	77,512.50	39,820.69
Lambton.....	Sarnia.....	25.46	180,034.29	90,961.63
Lanark.....	Smiths Falls.....	6.00	8,317.01	4,923.08
Leeds and Grenville.....	Brockville.....	20.70	36,011.40	18,214.65
	Gananoque.....	8.80	12,159.50	6,079.75
	Prescott.....	2.90	10,020.29	5,010.16
	Smiths Falls.....	5.30	10,463.80	5,481.70
Lincoln.....	St. Catharines.....	23.55	156,875.39	78,625.24
Middlesex.....	London.....	64.45	398,372.34	202,132.21
Northumberland and Durham.....	Trenton.....	12.75	20,446.77	10,286.28
Ontario.....	Oshawa.....	21.70	129,844.44	68,290.16
Oxford.....	Ingersoll.....	4.50	1,587.34	862.01
	Woodstock.....	11.00	25,108.09	12,634.79
Perth.....	St. Mary's.....	5.00	9,922.79	4,961.40
	Stratford.....	18.55	46,684.85	23,496.07
Peterborough.....	Peterborough.....	70.00	147,615.46	75,316.25
Simcoe.....	Barrie.....	19.10	26,287.62	14,085.32
Stormont, Dundas and Glengarry.....	Cornwall.....	62.28	170,024.25	85,096.86
Waterloo.....	Galt.....	38.26	66,317.46	33,986.80
	Kitchener.....	62.60	355,840.63	196,931.48
	Waterloo.....	21.11	119,529.67	64,478.05
Welland.....	Niagara Falls.....	18.80	75,929.02	38,043.61
	Welland.....	12.50	26,988.46	15,124.64
Wellington.....	Guelph.....	36.00	68,733.30	34,703.34
Wentworth.....	Hamilton.....	127.90	455,714.57	231,821.59
York.....	Toronto-York.....	190.36	1,680,239.71	919,173.15
TOTALS.....		1,231.59	\$5,837,673.91	\$3,080,566.22

INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

For the year 1960, 575 townships, 19 improvement districts and 31 Indian reserves received subsidies under this part of the Act.

Total expenditures were as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted...	\$17,376,217.03	\$15,890,351.37	\$33,266,568.40
Bridges and culverts...	5,058,596.76	736,403.30	5,795,000.06
Winter control		6,037,116.33	6,037,116.33
TOTAL APPROVED EXPENDITURE.....	\$22,434,813.79	\$22,663,871.00	\$45,098,684.79

Major items of work carried out at the township level are listed herewith:

Construction Items:

1. New or rebuilt gravel and stone surfaces.....	1,715 miles
Low cost bituminous surfaces	608 "
Pavements.....	124 "
COMPLETED ROAD CONSTRUCTION.....	2,447 miles
Graded to standard cross section	1,650 "
2. Bridges (10' span or over) — Concrete, 149; Steel, 23; Timber, 61;	
TOTAL.....	233
Culverts (under 10' span) — Concrete, 261; Steel, 300; Timber, 192.	
TOTAL.....	753
Culvert pipes installed	6,992

Maintenance Items:

1. Roadside ditching....	2,143 miles
Bituminous surface treatment..	499 "
Dust laying — oil...	1,358 "
Dust laying — calcium chloride.....	5,358 "
Clay gravel stabilization	185 "
Resurfacing — Pit-run gravel..	1,207,015 cu. yds.
Crushed gravel	2,298,993 "
Crushed stone	615,203 "
2. Winter control — Snowploughing...	45,951 miles
Snow fence.....	2,910 "
3. Weed and brush control — By spraying.....	17,070 "
By cutting.....	18,245 "
4. Bridges repaired	836
Culverts repaired.....	5,150

An attached appendix gives a chronological summary of expenditures by and subsidies accruing to townships, improvement districts and Indian reserves for the years 1920 to 1960 inclusive.

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

Expenditures in the urban municipalities showed the same upward trend as in counties and townships. A total of 30 cities, 8 separated towns, 149 towns and

154 villages received aid under this part of the Act. Total expenditures are shown below:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$16,910,230.17	\$10,234,640.06	\$27,144,870.23
Bridges and culverts.....	2,024,242.43	473,340.48	2,497,582.91
Winter control.....		7,257,308.88	7,257,308.88
TOTAL APPROVED EXPENDITURE.....	\$18,934,472.60	\$17,965,289.42	\$36,899,762.02

Appendices attached to this report give detailed information on urban municipalities.

DIRECT EXPENDITURES SECTION

F. C. BROWN, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(Part XI, The Highway Improvement Act)

During the fiscal year \$8,135,212.42 was expended on 159 projects involving 979.55 miles of road under designation for construction or improvement.

Thirty-nine projects with a total mileage of 181.85 were completed and the designations numbered 30 while 2 former development roads were redesignated for further improvements.

A total of 120 projects thus remained unfinished and were carried forward to the 1961 program.

Work completed during the fiscal year may be summarized as follows:

Grading.....	249.2 miles
Paving.....	92.6 "
Structures.....	3

Of the expenditure shown above \$5,757,368.04 (70.8%) was applied to 46 county road projects with the remaining \$2,377,844.38 (29.2%) on 113 township projects. Locations, mileages of designations and expenditure on development roads under designation during 1960 are listed in Appendix 14.

ROADS IN UNINCORPORATED TERRITORY

(Part XII, The Highway Improvement Act)

Over a large area in the territorial districts, sparsity of population renders incorporation impracticable. Under this part of the Act, aid can be rendered to Statute Labour Boards and groups in unincorporated townships. During the year 1960 the Department co-operated with 197 Statute Labour Boards, 7 Indian reserves, and 268 groups of settlers in the improvement and maintenance of local roads. Distribution of aid by districts is listed in the following table:

SUMMARY OF EXPENDITURES IN UNINCORPORATED TOWNSHIPS

MUNICIPAL DISTRICT	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10 -- Nipissing.....	\$ 4,518.29	\$ 16,039.46	\$ 20,557.75	.78
11 -- Huntsville.....	14,290.87	17,093.15	31,384.02	.55
12 -- Parry Sound.....	69,923.87	177,740.63	247,664.50	.72
13 -- Nipissing.....	47,832.07	132,882.68	180,714.75	.74
14 -- Temiskaming and Cochrane South.....	65,606.44	183,071.69	248,678.13	.74
16 -- Cochrane North.....	68,752.04	171,245.64	239,997.68	.71
17 -- Sudbury.....	59,194.20	116,919.02	176,113.22	.67
18 -- Algoma.....	55,884.78	133,578.71	189,463.49	.71
19 -- Thunder Bay.....	50,549.21	146,424.93	196,974.14	.74
20 -- Kenora and Rainy River..	52,622.41	129,902.98	182,525.39	.71
TOTALS.....	\$489,174.18	\$1,224,898.89	\$1,714,073.07	.72

A summary of work performed under statute labour, voluntary contributions and Department aid follows:

Construction Items:

Clearing and grubbing.....	428 acres
Grade construction.....	50 miles
Gravel and stone surfacing.....	225 "
Bridges (10' span and over) — Timber, 20; Concrete, 0; Steel, 3.	
TOTAL.....	23
Culverts (under 10' span) — Concrete, 11; Metal Arch, 9; Timber, 71.	
TOTAL.....	91
Culvert pipes installed.....	1,345

Maintenance Items:

Roadside ditching.....	376 miles
Brush and weed cutting.....	28,547 ft.
Winter control - - Snowploughing.....	2,282 miles
Snow fence.....	239 "
Pit-run gravel applied.....	376,923 cu. yds.
Crushed gravel and stone applied.....	21,529 "
Repaired bridges.....	190
Repaired culverts.....	1,139

SIDEWALK CONSTRUCTION, 1960

(Part XIII, Section 100(4), The Highway Improvement Act)

Under the above noted section, a township may with the approval of the Minister and the concurrence of the county, construct a sidewalk on a county road. On completion of the work and payment therefor, the township may apply to the Department for reimbursement to the extent of 50 per cent of the cost of the work. Payments to townships during the year under this heading were as follows:

Dover Township, Hamlet of Paincourt (Winter Line Road northeast side)	\$ 825.81
Clarke Township, Police Village of Orono (Main Street north County Road)	510.22
Plantagenet North Township, Police Village of Plantagenet (County Road No. 9 east and west side).....	1,523.08

Sandwich West Township, Cabana Road (County Road No. 18 north side).....	2,460.14
Thorold Township, Hamlet of Port Robinson (County Road No. 18 east side).....	882.55
Cumberland Township, Village of Sarsfield (County Road No. 1 south side).....	437.50
Clarence Township, Village of Clarence Creek (County Road No. 1 north side and No. 8 east side).....	700.00
TOTAL	\$7,339.30

PLANNING AND RESEARCH SECTION

C. R. WILMOT, P.Eng., Planning and Research Engineer

In co-operation with the County Engineers Advisory Committee, a study was conducted to establish criteria for determining desirable county road systems. The findings are incorporated in a booklet entitled "Recommendations Respecting Desirable County Road Systems in the Province of Ontario." This publication was circulated to all members of county councils throughout the Province. In keeping with the results of the study, assistance has been provided to all counties toward the classification of their individual road systems.

Following the appointment by the Minister of a City Engineers Advisory Committee, the section has assisted the members in studies of problems peculiar to urban municipalities.

A survey to determine correct mileages of roads in townships and bring township road maps up to date was started in 1960. It is anticipated that the information collected by the survey will be of considerable value in current and future subsidy studies.

PLANS APPROVAL SECTION

B. R. HEAVYSEGE, P.Eng., Plans Approval Engineer

Geometric design standards for county roads, developed in 1959 became effective in 1960. Plans and profiles covering 177 projects on 347 miles of county road were examined. Inspections of work carried out indicate that a general improvement has resulted from the application of the standards. In addition to those on county projects plans and profiles for 5 township development roads and 35 projects in Metropolitan Toronto and member municipalities were submitted for approval.

Valuable assistance was rendered on construction projects at both county and township level by the Operations Branch by making available the services of survey parties and the facilities of the Materials and Research Section.

SUMMARY OF MUNICIPAL ROAD IMPROVEMENTS—1960

The following listing by districts gives a summary of work carried out in 1960 by municipalities and other road organizations receiving aid under The Highway Improvement Act:

MUNICIPAL ROAD IMPROVEMENTS—1960

DISTRICT No. 1—(3 counties, 39 townships)

Essex—Construction: 2 miles hot mix, $\frac{1}{2}$ mile of stabilized base, 2 concrete bridges, 17 concrete culverts, 300 ft. of guide rail, 160 pipe culverts.

Maintenance: 25 miles ditching, 26 miles bituminous surface treatment, 94 miles calcium dust laying, 2 miles snow fence, 287 miles weed spraying, 15,000 cu. yds. pit-run gravel, 5,000 cu. yds. crushed stone applied, 3 culverts repaired.

Purchases: 2 power graders, 1 crawler backhoe, 1 traffic counter, 1 vacuum applicator, and 1 linewelder.

Kent—Construction: 21.50 miles of hot mix, 21.50 miles of stabilized base, 17,000 lin. ft. underdrainage, 10 concrete bridges, 45 pipe culverts, 35,000 tons pit gravel, and 5,000 tons crushed stone.

Maintenance: 4 miles ditching, 144 miles weed spraying, 398 miles weed and brush cutting, 1 bridge and 3 culverts repaired.

Purchases: 1 tractor, 1 tractor with sidemounted mower, 1 compactor, 1 ½-ton pickup, and 1 automobile.

Lambton—Construction: 12.50 miles of hot mix, 6,000 lin. ft. underdrainage, 10,000 rods fencing, 3,500 tons crushed stone, 165 pipe culverts.

Maintenance: 36 miles ditching, 6 miles bituminous surface treatment, 150 miles dust laying, 6 miles snow fence, 283 miles weed spraying, 283 miles weed and brush cutting, 9,200 cu. yds. pit-run gravel, 600 tons crushed stone, 2 bridges and 12 culverts repaired.

Purchases: 3 trucks, 1 power grader, 2 pickup trucks, 1 roller, 1 industrial tractor, 1 survey truck, and 1 storage tank.

Townships—Construction: 2.23 miles hot mix, 28.32 miles stabilized base, 49.4 miles of new grade using 83,620 cu. yds. of pit-run, 21,206 cu. yds. crushed gravel, 36,946 tons of crushed stone, 63,121 lin. ft. underdrainage, 3,240 lin. ft. guide rail, 205 rods of fencing, 18 bridges and 50 culverts repaired, 686 pipe culverts.

Maintenance: 43.5 miles bituminous surface treatment, 54.5 miles oil and 453.2 miles of calcium dust laying, 1,826.3 miles of weed spraying, 2,145.5 miles weed and brush cutting, 132,001 cu. yds. of pit-run, 69,599 cu. yds. crushed gravel, 110,401 tons crushed stone, 41 bridges and 266 culverts repaired.

Purchases: 2 power graders, 2 tractors with front-end loaders, 2 tractors with sidemounted mowers, 4 trucks, 1 pickup, 2 roadside weed sprayers, 1 chain saw, 1 snow wing, 1 scarifier, 1 hoist for snowplough wing.

DISTRICT No. 2—(4 counties, 43 townships, 28 urban municipalities)

Middlesex—Construction: 24.9 miles grade, 8 concrete culverts, 2 steel bridges, 16 concrete bridges, 3,836 ft. guide rail, 120,300 cu. yds. pit gravel, 32,300 yds. crushed gravel, 18.2 miles of light bituminous, 12.6 miles asphalt concrete pavement.

Maintenance: 32.9 miles bituminous surface treatment, 63 miles dust layer calcium, 762 miles weed cutting and spraying, 16,000 cu. yds. pit-run gravel, 37,400 cu. yds. crushed gravel.

Purchases: 1 snowplough, 1 self-propelled roller, 1 crawler tractor and scraper, 2 tractors with mowers and loaders, 2 trucks, 2 posthole diggers.

Elgin—Construction: 10 miles grade, 2 concrete bridges, 600 ft. guide rail, 8 miles light bituminous, 1 mile asphalt concrete pavement.

Maintenance: 14 miles bituminous surface treatment, 377 miles weed cutting and spraying, 10,000 cu. yds. crushed gravel, 3 bridges repaired.

Purchases: 1 truck, 1 tractor and mower, 1 tractor and front-end loader.

Norfolk—Construction: 9 miles grade, 4 concrete culverts, 1 steel bridge, 1 concrete bridge, 500 ft. guide rail, 72,000 cu. yds. crushed gravel, 16.5 miles light bituminous pavement.

Maintenance: 22.2 miles bituminous surface treatment, 6.2 miles calcium dust layer, 445 miles weed spraying and cutting, 100 cu. yds. crushed gravel, 5 bridges repaired, 10 culverts repaired.

Purchases: 1 car, 2 trucks, 1 posthole digger, 1 chain saw.

Oxford—Construction: 4.1 miles grade, 2 steel bridges, 4 concrete bridges, 36,100 cu. yds. pit gravel, 17,000 cu. yds. crushed gravel, 8.3 miles asphalt concrete pavement.

Maintenance: 41.9 miles bituminous surface treatment, 84.6 miles dust layer calcium, 431 miles weed spraying and cutting, 29,600 cu. yds. crushed gravel, 3 bridges repaired, 40 culverts repaired.

Purchases: 1 snowblower, 1 truck and snowplough.

Townships—Construction: 277.6 miles grade, 30 metal arch culverts, 16 concrete culverts, 21 concrete bridges, 6,498 ft. guide rail, 151,700 cu. yds. pit gravel, 116,600 cu. yds. crushed gravel, 19.6 miles light bituminous pavement, 14.6 miles asphalt concrete pavement.

Maintenance: 22 miles bituminous surface treatment, 124.9 miles of oil and 716.3 miles calcium dust layer, 2,785 miles weed spraying and 2,595 miles weed cutting, 116,000 cu. yds. pit gravel, 358,300 cu. yds. crushed gravel, 56 bridges repaired, 459 culverts repaired.

Purchases: 5 sanders, 14 trucks, 1 loader and backhoe, 3 snow wing and plough, 2 pumps, 1 brush chipper, 8 graders, 1 chain saw, 1 9-wheel packer, 1 float, 1 weed sprayer, 2 tractor loaders, 1 tractor and mower.

DISTRICT No. 3—(4 counties, 44 townships, 33 urban municipalities)

Huron—Construction: Clearing and grubbing 25 acres, 18 miles of grading, 200 pipe culverts, 1 concrete culvert, 8 concrete bridges, 5,600 rods of fencing, 216,000 cu. yds. pit-run and 200,000 cu. yds. crushed gravel for road surfacing, 6 miles light bituminous, 12.5 miles of asphalt.

Maintenance: 60 miles weed spraying, 200 miles weed cutting, 140,000 cu. yds. crushed gravel resurfacing, 1 culvert repaired.

Purchases: 2 trucks 25,000 G.V.W., 4 ½-ton pickup trucks, and 3 ½-ton panel trucks.

Perth—Construction: 4 miles grading, 70 pipe culverts, 1 concrete culvert, 3 bridges, 2,000 ft. guide rail, 6,500 ft. underdrainage, 7,040 rods of fencing, 90,000 cu. yds. pit-run and 43,500 cu. yds. of crushed gravel, 23.5 miles light bituminous.

Maintenance: 26 miles roadside ditching, 9 miles bituminous surface treatment, 100 miles dust layer calcium, 205 miles weed spraying, 24 miles weed cutting, 28,500 cu. yds. crushed gravel resurfacing, 1 bridge repaired, 2 culverts repaired.

Purchases: 1 new motor grader, 1 tractor and mower, 1 ½-ton pickup truck.

Waterloo—Construction: 10 miles grading, 30 pipe culverts, 8 bridges, 1,000 ft. guide rail, 87,724 cu. yds. pit-run, 79,956 cu. yds. crushed gravel, 15.6 miles light bituminous, 3.6 miles asphalt.

Maintenance: 6.5 miles bituminous surface treatment, 46 miles dust laying calcium, 203 miles weed spraying, 14,371 cu. yds. crushed gravel, 4 bridges repaired.

Wellington—Construction: 20 pipe culverts, 1 concrete culvert, 2 concrete bridges, 1.7 miles Mix-M. asphalt, 30,000 cu. yds. pit-run, 8,000 cu. yds. crushed gravel, 2 new machinery sheds.

Maintenance: 19 miles roadside ditching, 50 miles bituminous surface treatment, 193 miles calcium dust laying, 400 miles weed spraying and weed cutting, 101,000 cu. yds. crushed gravel resurfacing, 2 bridges repaired, 7 culverts repaired.

Purchases: 6 sanding units, 4 H.D. dump trucks, 1 spreader.

Townships—Construction: 55 acres clearing and grubbing, 205 miles of grading, 372 pipe culverts, 22 metal arch culverts, 16 concrete culverts, 38 bridges, 100 yds. sodding, 3,160 ft. guide rail, 10,370 ft. underdrainage, 3,070 rods fencing, 115,100 cu. yds. pit-run, 142,900 cu. yds. crushed gravel, 7,146 cu. yds. crushed stone, 5.4 miles light bituminous, 13.8 miles asphalt, 2 new machinery sheds.

Maintenance: 60.8 miles roadside ditching, 7,687 ft. ditching off-take, 68 miles bituminous surface treatment, dust layer 11 miles oil, 988 miles calcium, 11 miles clay stabilizer, 219 miles snow fencing, 2,995 miles of snowploughing, 1,375 miles weed spraying, 1,620 miles weed cutting, 10,600 cu. yds. pit-run, 427,706 cu. yds. crushed gravel resurfacing, 48 bridges repaired, 254 culverts repaired.

Purchases: 5 motor graders, 6 snowploughs and wings, 1 H.D. dump truck, 5 tractors and mowers, 1 ½-ton pickup truck, 1 power saw, 7.1 acres, and 1 gravel pit 7.8 acres.

DISTRICT No. 4—(5 counties, 38 townships, 2 Indian reserves, 25 urban municipalities)

Brant—Construction: 32 acres of clearing and grubbing, 7.5 miles of grading, 1 pipe culvert, 73 metal culverts, 1 concrete bridge, 1,595 sq. yds. of sodding, 100 lin. ft. of guide rail, 3,560 rods of fencing, 95,023 cu. yds. of pit-run gravel on 6.7 miles, 45,031 cu. yds. of crushed gravel on 6.7 miles, 118 cu. yds. crushed stone, 1 mile of hot mix asphalt.

Maintenance: 21.8 miles of calcium dust layer, 128.3 miles of snow clearing, 183.3 miles of weed cutting, 560 cu. yds. of pit-run gravel, 9,675 cu. yds. of crushed gravel, 1,934 cu. yds. of crushed stone, 2 bridges repaired.

Purchases: 1 5-ton truck, 1 station wagon, 1 automobile, 1 front-end loader, 1 sander, 13 acres of land.

Haldimand—Construction: 5.11 miles of grading, 21 pipe culverts, 3 concrete culverts, 7,098 rods of fencing, 90,756 cu. yds. of quarry stone on 7.58 miles, 8,400 cu. yds. of crushed stone on 7.58 miles, 8.3 miles of light bituminous surface.

Maintenance: 8.51 miles of roadside ditching, 25.7 miles of bituminous surface treatment, 2.5 miles snow fence, 165 miles snow clearing, 165 miles weed spraying, 1.5 miles weed cutting, 6,300 tons of crushed stone, 1 bridge repaired.

Purchases: 1 sander, 15.45 acres of land.

Lincoln—Construction: 7 acres of clearing and grubbing, 16 miles of grading, 65 pipe culverts, 10 concrete culverts, 3 concrete bridges, 8 miles stabilized base, 3,000 rods of fencing, 27,000 cu. yds. of pit-run gravel, 70,000 tons of crushed stone, 19 miles of light bituminous surface, 9 miles of hot mix asphalt.

Maintenance: 12 miles of roadside ditching, 19.5 miles of bituminous surface treatment, 4 miles snow fencing, 195 miles of snow clearing, 1,300 cu. yds. of pit-run gravel, 7,000 tons of crushed stone, 5 bridges repaired, 15 culverts repaired.

Purchases: 3 dump trucks, 3 snowploughs, 2 chain saws, 1 automobile, 1 loader.

Welland—Construction: 235 pipe culverts, 2 metal culverts, 1 concrete culvert, 1 steel bridge, 8.5 miles of stabilized base, 2,000 rods of fencing, 107,500 tons of crushed stone, 16.5 miles of light bituminous surface, 5.5 miles of hot mix asphalt.

Maintenance: 17 miles of roadside ditching, 2,500 feet of off-take ditching, 7 miles of calcium dust layer, 8.5 miles of snow fence, 163 miles of snow clearing, 163 miles of weed spraying, 163 miles of weed cutting, 1 bridge repaired, 4 culverts repaired.

Purchases: 1 grader, 1 dump truck, 1 loader, 1 tractor, 1 mower, 1 automobile, 1 chain saw, 1 roller, 18.5 acres of land.

Wentworth—Construction: 0.3 miles of grading, 1 pipe culvert, 180 rods of fencing, 3 miles of light bituminous surface.

Maintenance: 3.5 miles of roadside ditching, 5 miles of oil dust layer, 169 miles snow clearing, 169 miles of weed spraying, 7,785 tons of crushed stone, 2 bridges repaired.

Purchases: 4 dump trucks, 1 snowplough and wing, 5.5 acres of land.

Townships—Construction: 22.30 acres of clearing and grubbing, 89.04 miles of grading, 798 pipe culverts, 22 metal arch culverts, 31 concrete culverts, 24 concrete bridges, 6,233 lin. ft. of guide rail, 2,000 lin. ft. of underdrainage, 14.23 miles of stabilized base, 3,710 rods of fencing, 51,714.69 cu. yds. of pit-run gravel, 22,413 cu. yds. of crushed gravel, 7,875 cu. yds. crushed stone, 265,233.35 tons crushed stone, 121.08 miles of light bituminous surface, 2.37 miles hot mix asphalt.

Maintenance: 362.5 miles of roadside ditching, 9,433 ft. of off-take ditching, 67.54 miles of bituminous surface treatment, 392 miles oil dust layer, 289 miles of calcium dust layer, 28.89 miles of snow fence, 3,012.72 miles of snow clearing, 780.5 miles of weed spraying, 2,055.16 miles of weed cutting, 3,398 cu. yds. of pit-run gravel, 13,287 cu. yds. of crushed gravel, 38,388.9 tons of crushed gravel, 273,084.16 tons of crushed stone, 37 bridges repaired, 300 culverts repaired.

Purchases: 8 dump trucks, 7 pickup trucks, 1 grader, 1 used grader, 5 snowploughs, 1 weed sprayer, 5 sand spreaders, 3 tractors, 3 loaders, 2 mowers, 1 backhoe, 1 air compressor, 1 tar sprayer, 1 welder, 2 chain saws, 5.50 acres of land.

DISTRICT No. 5—(3 counties, 38 townships, 2 Indian reserves, 29 urban municipalities)

Bruce—Construction: 6.75 miles new grade, 1 metal arch and 1 concrete culvert, 8 concrete bridges, 1,600 ft. guide rail, 23.5 miles pit-run and 23.5 miles crushed gravel, 2.5 miles light bituminous paving.

Maintenance: 0.75 mile ditching, 162 miles calcium dust layer, 301 miles snow clearing, 27 miles weed spraying and 240 miles cut, 2,114 cu. yds. pit-run and 30,656 cu. yds. crushed gravel, 1 bridge and 2 culverts repaired.

Purchases: 1 grader, 3 trucks, 4 one-way ploughs, 1 transit, 1 drafting table, 45.68 acres of land.

Dufferin—Construction: 9.5 miles new grade, 2 concrete culverts, 1 concrete bridge, 800 ft. guide rail, 9.5 miles pit-run and 9.5 miles crushed gravel.

Maintenance: 0.5 mile ditching, 45 miles calcium dust layer, 179 miles snow clearing, 160 miles weed spraying and 100 miles cut, 500 cu. yds. pit-run and 37,500 cu. yds. crushed gravel, 1 bridge and 8 culverts repaired.

Purchases: 2 trucks, 1 weed sprayer, 1 V. plow, 2 wings, 18 acres of land.

Grey—Construction: 4 miles new grade, 2 concrete bridges, 900 ft. guide rail, 4 miles crushed gravel.

Maintenance: 6.9 miles ditching, 13 miles bituminous surface treatment, 23.5 miles oil dust layer and 215 miles calcium dust layer, 365 miles snow clearing, 144 miles weed spraying and 152 miles cut, 83,364 tons crushed gravel, 2 bridges and 22 culverts repaired.

Purchases: 1 grader, 1 truck, 15 acres of land.

Townships (incl. Indian Reserves)—Construction: 128.22 miles new grade, 1 wood culvert, 25 metal arch and 2 concrete culverts, 9 concrete bridges, 960 ft. guide rail, 60.05 miles pit-run and 50.02 miles crushed gravel, 5.2 miles light bituminous paving.

Maintenance: 71.5 miles ditching, 0.5 mile bituminous surface treatment, 2 miles oil dust layer and 411.25 miles calcium dust layer, 3,830 miles snow clearing, 808 miles weed spraying and 1,435.75 miles cut, 55,376 cu. yds. pit-run and 394,876 cu. yds. crushed gravel, 9 cu. yds. crushed stone, 31 bridges and 241 culverts repaired.

Purchases: 3 graders, 1 truck, 1 V. plough and wing, 1 roller, 1 tractor mower, 1 water tank and pump, summer tracks for bulldozer, 1 machine shed, 21.12 acres of land.

Urbans—Construction: 49.9 miles new grade, 4 metal arch and 3 concrete culverts, 1 concrete bridge, 700 ft. guide rail, 5.46 miles pit-run and 5.08 miles crushed gravel, 5.67 miles light bituminous paving and 0.5 mile concrete pavement.

Maintenance: 18 miles ditching, 45.6 miles bituminous surface treatment, 18.5 miles oil dust layer and 90.8 miles calcium dust layer, 288.05 miles snow clearing, 22.5 miles weed spraying and 80 miles cut, 3,239 cu. yds. pit-run and 24,239 cu. yds. crushed gravel, 329.5 cu. yds. and 1,873.5 tons crushed stone, 10 bridges and 60 culverts repaired.

Purchases: 1 grader, 2 chain saws, 2 tractors, 1 mower and 1 loader and 1 shovel attachment for tractors, 1 dozer blade for grader, 5 acres of land.

DISTRICT No. 6—(4 counties, 31 townships, 1 Indian reserve, 33 urban municipalities)

Halton—Construction: 10 miles of grading, 46 pipe culverts, 1 concrete culvert, 3 concrete bridges, 1,500 lin. ft. of guard rail, 7.3 miles of stabilized base, 67,000 cu. yds. pit gravel on 6.8 miles, 14,600 cu. yds. of crushed gravel on 6.8 miles, 13,800 tons crushed stone on 2.5 miles, 17 miles light bituminous surface.

Maintenance: 2 miles of roadside ditching, 50 miles of calcium chloride dust layer, 7,600 cu. yds. of crushed gravel, 2 bridges repaired.

Purchases: 1 gradall, 1 5-ton dump truck, 1 hopper body sand spreader, 2 snowploughs, 1 acre of land.

Peel—Construction: 7.56 miles of clearing and grubbing, 9.3 miles of grading, 214 pipe culverts, 1 metal arch culvert, 7 concrete culverts, 8 concrete bridges, 1,900 sq. yds. of sodding, 19,003 lin. ft. of guide rail, 2,428 lin. ft. of underdrainage, 4,277 rods of fencing, 123,200 cu. yds. pit-run gravel on 9.3 miles, 104,300 cu. yds. crushed gravel on 9.3 miles, 2,813 tons of crushed stone, 13.2 miles asphalt pavement.

Maintenance: 7.5 miles of roadside ditching, 10.4 miles bituminous surface treatment, 40 miles of calcium chloride dust layer, 27,500 miles of crushed gravel, 30 miles of oil dust layer.

Purchases: 2 ½-ton pickup trucks, 1 passenger car, 1 5-ton dump truck, 1 snowplough wing, 1 asphalt pump engine.

Simcoe County and Barrie Suburban Road Commission—Construction: 7.0 miles of clearing and grubbing, 5.2 miles of grading, 74 pipe culverts, 2 metal arch culverts, 1 concrete bridge, 2,000 lin. ft. of guide rail, 5,500 rods of fencing, 45,545 cu. yds. pit gravel on 5 miles, 20,371 cu. yds. crushed gravel on 5 miles, 549 tons crushed stone, 6.7 miles asphalt concrete pavement.

Maintenance: 8.5 miles of roadside ditching, 1.2 miles of bituminous surface treatment, 44 miles of oil dust layer, 102 miles of calcium chloride dust layer, 10,902 cu. yds. of pit-run gravel, 8,902 tons of crushed gravel, 550 tons of crushed stone.

Purchases: 1 tractor loader, 1 ½-ton truck, 1 5-ton dump truck, 1 power saw, 24.27 acres of land.

York County and Toronto and York Suburban Road Commission—Construction: 26 miles of clearing and grubbing, 7.1 miles of grading, 195 pipe culverts, 1 metal arch culvert, 1 concrete and steel bridge, 9 concrete bridges, 40,000 sq. yds. of sodding, 16,500 lin. ft. of guide rail, 700 lin. ft. of underdrainage, 7.1 miles of stabilized base, 3,700 rods of fencing, 109,705 cu. yds. pit gravel on 7.1 miles, 58,086 cu. yds. crushed gravel on 9.7 miles, 8.4 miles of asphalt concrete pavement.

Maintenance: 18 miles of roadside ditching, 25 miles of calcium chloride dust layer, 5,600 cu. yds. of pit-run gravel, 5,756 tons of crushed gravel, 2,451 tons of crushed stone, 38 culverts repaired.

Purchases: 13 sand spreaders, garage equipment as twin post lift, air compressor, floor jack, lubricating equipment, welding and cutting set, motor lift, battery charger, 33.5 acres of land.

Townships and 1 Indian Reserve—Construction: 49 miles of clearing and grubbing, 115.4 miles of grading, 460 pipe culverts, 56 metal arch culverts, 11 concrete culverts, 3 wooden bridges, 2 steel bridges, 21 concrete bridges, 59,794 sq. yds. of sodding, 6,886 lin. ft. of guide rail, 13.7 miles of stabilized base, 2,943 rods of fencing, 257,240 cu. yds. pit gravel on 93.5 miles, 163,983 cu. yds. of crushed gravel on 47.5 miles, 70,136 tons crushed stone on 23 miles, 56.5 miles of light bituminous surface, 4.57 miles of asphalt concrete pavement.

Maintenance: 160.6 miles of roadside ditching, 25,920 lin. ft. of off-take ditching, 57 miles bituminous surface treatment, 282.5 miles of oil dust layer, 659 miles of calcium chloride dust layer, 9 miles of clay stabilization, 83,373 cu. yds. of pit-run gravel, 227,818 cu. yds. of crushed gravel, 231,425 tons of crushed gravel, 44,351 tons of crushed stone, 41 bridges repaired, 327 culverts repaired, 293 miles snow fence, 4,446 miles snow clearing, 4,119 miles weed spraying, 1,388 miles weed cutting.

Purchases: 5 motor graders, 3 5-ton dump trucks, 2 4-ton dump trucks, 1 4-ton cab and chassis, 1 $\frac{3}{4}$ -ton pickup truck, 8 snowploughs, 3 hopper type sand spreaders, 2 four-wheel-drive loaders, 1 wobble wheel roller, 1 small tractor with mower and loader, 1 weed sprayer, 1 calcium chloride spreader, 1 2-way radio telephone, 27.1 acres land purchased, 9.0 acres of gravel pits purchased, 1 $\frac{1}{2}$ -ton pickup truck.

Urban—4.5 miles asphalt concrete pavement.

DISTRICT No. 7—(3 counties, 37 townships, 17 urban municipalities)

Northumberland and Durham—Construction: 17 miles of new grade, 16 miles asphalt concrete cement, 10 miles stabilized base, 3,000 ft. guide rail, 90,000 cu. yds. pit-run gravel, 71,204 cu. yds. of crushed gravel, 2 concrete culverts, 3 concrete bridges.

Maintenance: 8,000 cu. yds. pit-run gravel, 5,000 cu. yds. crushed gravel, 91 miles oil and 21 miles calcium dust layer, 310 miles weed spray, 317 miles weed cut.

Purchases: Schield Bantam shovel, 2 int. trucks, Ford tractor, storage shed.

Peterborough—Construction: 6.35 miles new grade, 2 miles light bituminous, 13,000 cu. yds. pit-run, 28,000 cu. yds. crushed gravel, 1,700 rods of fencing, 1 wooden bridge, 1 concrete bridge.

Maintenance: 13 miles ditching, 43 miles oil, 80 miles calcium dust layer, 220 miles weed spray, 18 miles weed cut, 12 bridges repaired, 22,000 cu. yds. pit-run, 12,000 cu. yds. crushed gravel.

Purchases: weed sprayer, 3 sanders, crusher motor.

Prince Edward—Construction: 9.5 miles new grade, 3.50 miles asphalt concrete, 2,300 ft. guide rail, 221,000 cu. yds. pit-run gravel, 32,000 cu. yds. crushed gravel, 5,780 rods fencing, 9 metal arch culverts.

Maintenance: 68.6 miles oil and 16 miles calcium dust layer, 159 miles weed spray, 7 miles weed cut, 1 bridge repaired, 1 culvert repaired, 40 acres of land, 20 acres of pits.

Townships—Construction: 95.7 miles new grade, 4 concrete culverts, 67 metal arch culverts, 2,100 ft. guide rail cable, 6 miles stabilized base, 66,277 cu. yds. of pit-run gravel, 115,499 cu. yds. crushed gravel, 2,000 cu. yds. crushed stone, 18.75 miles light bituminous, 2.9 miles asphalt concrete.

Maintenance: 8.90 miles bituminous surface treatment, 74.75 miles oil and 226.60 miles calcium dust laying, 15 miles clay stabilized, 843 miles weed spraying, 1,383.50 weed cut, 42,602 cu. yds. pit-run gravel, 61,875 cu. yds. of crushed gravel, 4,595.16 tons of crushed gravel, 125 tons of crushed stone, 64 bridges repaired, 332 culverts repaired.

Purchases: 69 acres of land, 6 graders, 5 trucks, 1 loader, 2 chain saws, 4 snowploughs.

DISTRICT No. 8—(4 counties, 42 townships, 1 Indian reserve, 18 urban municipalities)

Frontenac—Construction: 6 acres clearing and grubbing, 4,745 rods of fencing, 7,460 cu. yds. crushed stone, 5 pipe culverts, 6 other culverts and 1 steel bridge.

Maintenance: 20 miles ditching, 12.9 miles bituminous surface treatment, 52 miles calcium dust layer, 165 miles snow clearing, 50 miles weed spraying, 30 miles weeds cut, 11,020 cu. yds. crushed stone, 2 bridges and 19 culverts repaired.

Purchases: 19 acres of land, 1 truck.

Hastings—Construction: 2.5 acres clearing and grubbing, 2.75 miles of new grade, 150 lin. ft. guide rail, 1,960 rods fencing, 2,475 cu. yds. pit gravel, 854 cu. yds. crushed gravel, 1,040 cu. yds. crushed stone, 0.25 miles Mix-M., 29 pipe culverts, 2 other culverts and 1 steel bridge.

Maintenance: 6.5 miles roadside ditching, 24 miles bituminous surface treatment, 27 miles oil dust layer and 103 miles calcium dust layer, 15 miles snow fence, 265 miles snow clearing, 37 miles weed spraying, 237 miles weeds cut, 3,646 cu. yds. pit-run gravel, 8,425 cu. yds. crushed gravel, 6,417 cu. yds. crushed stone, 17 bridges and 15 culverts repaired.

Purchases: 12.5 acres of land, 1 loader, 1 dump truck and 2 sand units.

Lennox and Addington—Construction: 28 acres clearing and grubbing, 7 miles of new grade, 25,000 sq. yds. sodding, 4,500 lin. ft. guide rail, 4,500 rods fencing, 35,000 cu. yds. of pit gravel for 4 miles, 7,000 cu. yds. of crushed gravel for 4 miles, 4,000 tons crushed stone, 3 miles light bituminous, 3.5 miles Mixed-M., 45 pipe culverts, 3 other culverts and 1 bridge.

Maintenance: 9 miles roadside ditching, 1,200 ft. off-take ditching, 23 miles bituminous surface treatment, 25 miles of oil dust layer, 175 miles snow clearing, 120 miles weed spraying, 50 miles of weeds cut, 9,000 cu. yds. crushed stone, 1 culvert repaired.

Purchases: 3 used trucks, 1 new truck, used snow blower, float and broom.

Leeds and Grenville—Construction: 25.2 acres clearing and grubbing, 12.2 miles of new grade, 7,790 lin. ft. guide rail, 150 ft. underdrainage, 3.6 miles stabilizing base, 3,900 rods fencing, 14,730 cu. yds. crushed gravel for 10.7 miles, 4,248 cu. yds. crushed stone for 2.5 miles, 4.3 miles light bituminous, 19 pipe culverts, 1 other culvert and 9 bridges.

Maintenance: 8 miles roadside ditching, 3,200 ft. off-take ditching, 23.5 miles bituminous surface treatment, 134 miles calcium dust layer, 3.6 miles clay stabilizing, 29 miles snow fencing, 347 miles snow clearing, 444 miles weed spraying, 10 miles weeds cut, 8,020 cu. yds. crushed gravel, 6,573 cu. yds. crushed stone, 5 bridges and 25 culverts repaired.

Purchases: 18.4 acres of land, new motor grader equipped with snowplough, 1 compressor and new 3-ton dump truck.

Townships—20 acres cleared and grubbed, 66 miles new grade, 407 lin. ft. guide rail, 1,400 ft. underdrainage, 3,927 rods fencing, 31,461 cu. yds. pit gravel, 13,479 cu. yds. crushed gravel, 4,199 cu. yds. crushed stone.

Maintenance: 142.85 miles roadside ditching, 2,550 ft. off-take ditching, 13.2 miles bituminous surface treatment, 146.5 miles oil dust layer, 52 miles calcium dust layer, 71 miles clay stabilizing, 76.63 miles snow fencing, 2,917 miles snow clearing, 1,816 miles weed spraying, 562 miles weeds cut, 28,805 cu. yds. pit-run gravel, 47,251 cu. yds. crushed stone, 493 tons crushed stone, 52 bridges and 459 culverts repaired.

Purchases: 13 trucks, steamer, tar pot, 3 graders, 2 tractors, chain saw, sprayer pump and 1 steam thawer, 10.3 acres of land.

Urbans—William St. Overpass: Separated Town of Brockville was officially opened in 1960. Edward St. Overpass: Separated Town of Prescott was opened in 1960. The City of Belleville experimented with planing of paved streets and completed resurfacing.

Items for Department Photographer—(1) Black Rapids, bridge and approaches, Development Road 572, Leeds and Grenville; (2) Kemptville By-pass, Development Road 449, Leeds and Grenville; (3) Halloway By-pass finished and paved in 1960, Development Road 416, Hastings; (4) Basswood Hill, Development Road 392, Lennox and Addington; (5) Access Road, Ontario St. Lawrence Commission Park, Adolphustown Township.

DISTRICT No. 9—(4 county units, 47 townships and 23 urban municipalities)

Carleton—Construction: 15.60 miles of hot mix, 21.50 miles of light bituminous surfaces, 6.6 miles of stabilized base, 18.2 miles of new grade using 256,294 cu. yds. of pit gravel, 67,482 cu. yds. of crushed gravel, 2 acres of clearing and grubbing, 2,000 lin. ft. of guide rail, 4,800 rods of fencing, 794 lin. ft. of underdrainage, 146 pipe culverts, 1 metal arch culvert, 3 concrete culverts, 3 steel bridges and 2 concrete bridges.

Maintenance: 7.2 miles of bituminous surface treatment, 44 miles of calcium dust layer, 185 miles of weed spraying, 4 miles of roadside ditching, 40.5 miles of snow fencing, 262.5 miles of snow clearing, 79 miles of weed and brush cutting, 32,105 cu. yds. of pit gravel, 8,554 cu. yds. of crushed gravel, 1,500 tons of crushed stone, 2,624 tons of cold mix patching, 2 bridges repaired and 47 culverts repaired.

Purchases: 1 dump truck, 1 1-ton pickup truck, 1.71 acres of land.

Lennox and Addington—Construction: 4.3 miles of light bituminous surfaces, 4.5 miles of stabilized base, 4.5 miles of new grading using 77,300 cu. yds. of pit gravel, 25,700 cu. yds. of crushed gravel and 1,360 cu. yds. of crushed stone; 25 acres of clearing and grubbing, 3,000 lin. ft. of guide rail, 1,740 rods of fencing, 40 pipe culverts, 1 metal arch culvert, 1 concrete rigid frame bridge.

Maintenance: 16.9 miles of bituminous surface treatment, 110 miles of calcium dust layer, 27 miles of snow fence placed, 250 miles of snow clearing, 140 miles of weed spraying, 105 miles of weed and brush cutting, 5.5 miles of roadside ditching, 1,500 lin. ft. of off-take ditching, 2,520 cu. yds. of pit gravel, 7,600 cu. yds. of crushed gravel, 10 cu. yds. of crushed stone, 6 bridges repaired.

Purchases: 1 car, 1 pickup truck, 1 welder, 1 chain saw, 1 jack, 1 impact wrench, 37 acres of land and 4.055 acres of gravel pits.

Prescott and Russell—Construction: 7 miles of hot mix paving, 9 miles of light bituminous surface, 13 miles of new grading using 80,000 cu. yds. of pit gravel, 40,000 cu. yds. of crushed gravel, 10,000 tons of crushed stone, 20 miles of stabilized base, 8,000 rods of fencing, 40,000 sq. yds. of sodding, 100 pipe culverts, 1 metal arch culvert, 3 concrete culverts and 1 concrete bridge.

Maintenance: 2 miles of bituminous surface treatment, 3 miles of calcium dust laying, 2 miles of roadside ditching, 10,000 lin. ft. of off-take ditching, 100 miles of snow fence placed, 325 miles of snow clearing, 300 miles of weed spraying, 20,000 cu. yds. of crushed gravel, 10,000 cu. yds. of crushed stone, 2 bridges repaired.

Purchases: 1 tractor with front-end loader.

Stormont, Dundas and Glengarry—Construction: 15.75 miles of hot mix, 140 rods fencing, 14 miles of new grade using 57,968 cu. yds. of pit gravel, 19,786 cu. yds. of crushed gravel, 213 cu. yds. of crushed stone, 1 concrete bridge.

Maintenance: 17 miles of calcium dust laying treatment, 12 miles of snow fence placed, 463.20 miles of snow clearing, 238 miles of weed spraying, 9,131 cu. yds. of pit gravel, 13,923 cu. yds. of crushed gravel, 1,949 cu. yds. of crushed stone.

Purchases: 2 snowploughs, 92 acres of land.

Townships—Construction: 6.65 miles of mixed Macadam, 8.50 miles of light bituminous surface, 8.25 miles of stabilized base, 130 miles of new grading using 217,676 cu. yds. of pit gravel, 116,723 cu. yds. of crushed gravel, 26,250 cu. yds. of crushed stone, 122.25 acres of clearing and grubbing, 664 pipe culverts, 1 wood culvert, 23 metal arch culverts, 72 concrete culverts, 3 wood bridges, 3 steel bridges, 2,380 lin. ft. of guide rail, 16,319.50 rods of fencing.

Maintenance: 0.50 miles of bituminous surface treatment, 30 miles of clay stabilized base, 86,118 cu. yds. of pit gravel, 234,804 cu. yds. of crushed gravel, 14,910 cu. yds. of crushed stone, 98.7 miles of roadside ditching, 9,300 lin. ft. of off-take ditching, 74 miles of oil dust laying, 466.4 miles of calcium dust laying, 251.56 miles of snow fence, 4,143 miles of snow clearing, 583 miles of weed spraying, 811.75 miles of weed and brush cutting, 86 bridges repaired, 262 culverts repaired.

Purchases: 2 new dump trucks, 1 used dump truck, 4 graders, 2 industrial tractors, 4 pickup trucks, 1 compressor, 1 chain saw, 1 float, 423.54 acres of land purchased, 2 acres of gravel pit.

DISTRICT No. 10—(1 county, 41 townships, 14 urban municipalities, 1 Indian reserve, 4 Statute Labour Boards, 1 unorganized unit)

Renfrew—Construction: Cleared 28 acres, 9 miles of new grade and base using 86,000 cu. yds. of pit-run gravel and 3,500 cu. yds. of crushed gravel, 1,000 ft. guide rail, 700 ft. of underdrainage, 9,000 rods fencing, 1 mile of asphalt pavement, 61 pipe culverts, 180-ft. rigid frame concrete bridge.

Maintenance: 5 bridges repaired, 15 culverts replaced, 3 miles of roadside ditching, 2,750 ft. off-take ditching, 55 miles of dust laying with calcium chloride, 41 miles snow fence, 224 miles of now clearing, 90 miles weed spraying, 155 miles weed cutting, 3,000 cu. yds. pit-run gravel and 2,000 cu. yds. crushed gravel.

Purchases: 2 tractor loaders with mowers, posthole diggers, 21.50 acres of land.

Townships—Construction: 30 miles clearing, 63 miles grading using 65,768 cu. yds. of pit-run gravel and 11,972 cu. yds. crushed gravel and 445 tons crushed stone, 1,414 ft. guide rail and 3,569 rods fence, 233 pipe culverts, 47 wood culverts, 14 metal arch, 1 concrete bridge and 7 wooden bridges, 6,000 ft. underdrainage.

Maintenance: 91 miles roadside ditching, 3,350 ft. off-take ditching, 7 miles bituminous surface treatment, 53.5 miles oil prime and 117 miles of calcium chloride dust laying, 161.5 miles snow fence, 2,743.5 miles snow clearing, 215 miles weed spraying, 441 miles weed cutting, 103,011 cu. yds. pit-run gravel, 50,563 cu. yds. crushed gravel, 270 cu. yds. crushed stone, 2,748 tons crushed stone used, 62 bridges repaired, 253 culverts repaired.

Purchases: 2 F-950 Ford trucks, 2 G.M.C. trucks, 1 V type snowplough, 1 used Sawyer-Massey grader, 1 used maintainer, 1 1944 4-wheel-drive Chev army truck (used), 2 Austin-Western graders with plough and wing, 1 Cockshutt tractor 540 loader with posthole digger and mower, 1 gravel pit and 3,152 acres of land.

Statute Labour and Unorganized Units—Construction: Built two timber bridges, 2 wooden culverts and installed 11 C.I.P. culverts.

Maintenance: Dragged 45 miles road, applied 9 cu. yds. mulch, 75 cu. yds. crushed gravel, 2,000 cu. yds. pit-run gravel, repaired 3 bridges.

DISTRICT No. 11—(2 counties, 1 provisional county, 1 district, 49 townships, 1 improvement district, 2 Indian reserves, 19 urban municipalities, 4 statute labour boards)

Ontario—Construction: 2.6 miles light bituminous surfacing, 8.75 miles hot mix paving, 17 miles new grades using 210,000 cu. yds. pit-run and 45,000 cu. yds. crushed gravel, 0.5 mile crushed stone surface, 400 cu. yds., 63 acres land cleared and grubbed, 170,000 sq. yds. sodding, 18,000 lin. ft. guide rail, 2,000 ft. underdrainage, 17 miles stabilized base, 11,200 rods fencing, 1 wood, 1 steel, 6 concrete bridges and 1 metal arch constructed, 90 culvert pipes.

Maintenance: 4.5 miles roadside ditching, 21.2 miles bituminous surface treatment, 37.5 miles oil and 61.5 miles calcium dust laying, 48 miles snow fence, 262 miles snow clearing, 215 miles weed spraying, 17.5 miles weed cutting, 15,500 cu. yds. pit-run, 18,250 cu. yds. crushed gravel and 1,000 cu. yds. crushed stone, repairs to 10 bridges and 30 culverts.

Purchases: 45 acres of land, 3 gravel pits, 2 trucks, 2 pumps, 1 tractor, 1 plough, 1 steam culvert thawer, 4 sanders.

Victoria—Construction: 6.35 miles hot mix paving, 7.9 miles new grades of pit-run and crushed gravel, 80 rods fencing, 1 concrete bridge built, 51 culvert pipes.

Maintenance: 600 ft. off-take ditching, 5.15 miles bituminous surface treatment, 7.4 miles oil and 100 miles calcium dust laying, 49 miles snow fence, 234 miles snow clearing, 198 miles weed spraying, 234 miles weed cutting, 3,186 cu. yds. pit-run, 41,683 cu. yds. crushed gravel and 5,000 tons crushed stone, repairs to 15 bridges and 30 culverts.

Purchases: 1 truck, 1 plough, 2 sanders, 1 sprayer motor, 1 800-gal. tank.

Townships—Construction: 24.4 miles light bituminous surfacing, 8 miles hot mix paving, 111,740 cu. yds. pit-run, 49,667 cu. yds. crushed gravel and 21,842 cu. yds. crushed stone, 40 acres of land cleared and grubbed, 1,555 sq. yds. sodding, 394 lin. ft. guide rail, 1,750 ft. underdrainage, 6.5 miles stabilized base, 4,287 rods fencing, 24 wood, 2 steel, 5 concrete bridges built, 26 wood, 18 metal arch and 40 concrete culverts, 709 culvert pipes.

Maintenance: 229.5 miles roadside ditching, 4,067 ft. off-take ditching, 34 miles oil, 572.5 miles calcium dust laying, 303 miles snow fence, 3,501 miles snow clearing, 939 miles weed spraying, 2,223 miles weed cutting, 90,224 cu. yds. pit-run, 112,650 cu. yds. crushed gravel, 8,729 cu. yds. crushed stone, repairs to 52 bridges and 548 culverts.

Purchases: 73 acres of land, 3 graders, 12 trucks, 10 ploughs, 4 loaders, 1 tractor mower, 1 brush cutting machine, 2 sanders, 1 chain saw, 1 steam culvert thawer.

Statute Labour—Maintenance: 10 miles roadside ditching, 480 ft. off-take ditching, 15 miles weed and brush cutting, 23 miles snow clearing, 4,680 cu. yds. pit-run and 5,420 cu. yds. crushed gravel, 19 culverts repaired.

DISTRICT No. 12—(18 townships, 4 Indian reserves, 9 urban municipalities, 18 statute labour boards, 6 unorganized units)

Townships—Construction: 14.5 acres cleared, 20.25 miles reconstructed, 6,789 cu. yds. pit-run gravel, 3,584 cu. yds. crushed gravel, 170 pipe culverts, 3 wood culverts, and 4 concrete culverts installed, 2 wood bridges constructed, 3 miles of mulch pavement laid.

Maintenance: 79.13 miles roadside ditching, 5,970 ft. off-take ditching, 7.5 miles bituminous surface treatment, 8 miles oil dust layer, 86.25 miles calcium chloride dust layer, 49.4 miles snow fence, 854 miles snowploughed, 97.55 miles weed spraying, 138 miles weed cutting, 74,186 cu. yds. pit-run and 26,404 cu. yds. crushed gravel, 59 bridges and 284 culverts repaired.

Purchases: 2 dump trucks, 1 loader, 2 snowploughs and 1 steam jenny.

Statute Labour and Unorganized Units—Construction: 10.5 miles reconstructed, 17,720 cu. yds. pit-run gravel applied, 2 timber and steel bridges built, 513 pipe culverts installed.

Maintenance: 54.5 miles roadside ditching, 6,600 ft. off-take ditching, 61 miles brushing and weed cutting, 9.5 miles snow fence erected, 435 miles snowploughing, 70,140 cu. yds. pit-run and 1,530 cu. yds. crushed gravel, 25 bridges and 289 culverts repaired.

DISTRICT No. 13—(17 organized townships, 7 urban municipalities, 17 statute labour boards, 28 unorganized units)

Organized Townships—Construction: 15.7 miles of clearing and grubbing, 220 pipe culverts, 17.8 miles of reshaping, 13 timber culverts, 5 metal arch culverts and 1 timber bridge, 680 lin. ft. of guide rail, 400 rods of fencing, 35,267 cu. yds. of pit-run gravel, 7,059 cu. yds. of crushed gravel and 3.12 miles of mulch or cold mix surface.

Maintenance: 31.2 miles of roadside ditching, 11,580 lin. ft. of off-take ditching, 17 miles of oil dust layer, 24.5 miles of calcium dust layer, 88.1 miles of snow fence erected, 825.4 miles of road snowploughed, 13 miles of weed spraying, 159.9 miles of weed cutting, 60,925 cu. yds. of pit-run gravel, 12,228 cu. yds. of crushed gravel and 535 cu. yds. of crushed stone applied, 32 bridges and 188 culverts repaired.

Purchases: 1 Tandem Caterpillar grader, 3 trucks, 4 "V" snowploughs, 4 snow wings, 1 air compressor with rock drill and hose, 1 Simcoe oil heater, 1 weed sprayer, 1 International TD9 crawler-type tractor with front-end loader and dozer blade and 19,212 acres of land.

Statute Labour and Unorganized Units—Construction: 89 pipe culverts, 6 metal arch culverts, 3 wood bridges, 1 Bailey bridge, 47,959 cu. yds. of pit-run gravel and 7,991 cu. yds. of crushed gravel.

Maintenance: 23.8 miles of roadside ditching, 7,630 lin. ft. of off-take ditching, 118.6 miles of weed and brush cutting, 13.3 miles of snow fence erected, 172.43 miles of road snowploughed, 42,669 cu. yds. of pit-run gravel, 100 cu. yds. of crushed gravel, 28 bridges and 157 culverts repaired.

DISTRICT No. 14—(23 townships, 3 improvement districts, 11 Indian reserves, 9 urban municipalities, 28 statute labour boards, 59 unorganized townships)

Organized Townships—Construction: 2.5 miles of light bituminous, 4.7 miles of hot mix, 21.5 miles new grade, 32,626 cu. yds. of pit-run gravel, 3,171 cu. yds. of crushed gravel, 2,000 cu. yds. of crushed stone, 104 C.I.P. culverts, 14 wood culverts, 3 timber bridges, 3 steel bridges.

Maintenance: 76 miles roadside ditching, 5,900 ft. off-take ditching, 6 miles bituminous surface treatment, 13 miles of dust layer, 220 miles of snow fence, 810 miles of snowploughing, 235 miles of weed spraying, 58 miles of weed cutting, 56,480 cu. yds. pit-run gravel, 9,918 cu. yds. of crushed gravel, 9,341 tons of crushed gravel, 4,500 cu. yds. crushed stone, 47 bridges, 219 culverts.

Purchases: 1 International $\frac{1}{2}$ -ton pickup truck, 1 snowplough wing, 1 Caterpillar grader.

Statute Labour and Unorganized Units—Construction: 1 mile of clearing, 4 miles new grade, 16 C.I.P. pipe culverts, 2,100 cu. yds. pit-run gravel.

Maintenance: 32 miles roadside ditching, 1,600 ft. off-take ditching, 63 miles of weed cutting, 86 miles snow fence, 38,000 cu. yds. pit-run gravel, 4,000 cu. yds. crushed gravel, 180 miles snowploughing, 52 bridges, 188 culverts.

DISTRICT No. 16—(7 organized townships, 5 urban municipalities, 1 improvement district, 27 statute labour boards, 29 unorganized units)

Organized Townships—Construction: 4 acres cleared and grubbed, 1 mile of new grade, 8,060 cu. yds. pit-run gravel and 2,300 cu. yds. crushed gravel on 1.27 miles of new and reconstructed grades, 2 creosoted timber bridges, 1 timber culvert, 19 pipe culverts.

Maintenance: 8.50 miles of roadside ditching, 8,200 lin. ft. off-take ditching, 3 miles of oil dust laying, 18.25 miles calcium dust laying, 43 miles of snow fence, 283 miles of snow clearing, 15 miles of weed spraying and 8.25 miles of weed cutting, 30,352 cu. yds. of pit-run gravel, 7,149 tons crushed gravel, 10 bridges and 35 culverts repaired, 4.11 acres of land acquired for road allowances.

Purchases: 1 four-wheel-drive truck with 1-way plough and wing, 1 grader with "V" plough and wing, 1-wheeled power mower, 1 brush saw.

Statute Labour and Unorganized Townships—Construction: 9.55 miles of grade reconstruction, 10,683 cu. yds. of pit-run and 380 cu. yds. crushed gravel on 12.45 miles of reconstructed grade, 3 creosoted timber bridges, 6 creosoted timber culverts, 69 pipe culverts.

Maintenance: 25.36 miles roadside and 3,100 lin. ft. off-take ditching, 104.50 miles of weed and brush cutting, 24.65 miles of snow fence erected, 196.40 miles of snowploughing, 39,855 cu. yds. pit-run gravel, 21 timber bridges and 16 culverts repaired.

DISTRICT No. 17—(24 organized townships, 10 urban municipalities, 7 Indian reserves, 1 improvement district, 20 statute labour boards, 21 unorganized units)

Organized Townships—Construction: 88 acres of clearing, 25 miles of grade, 129 culverts — 5 wood, 3 metal arch, 15 concrete, 2 concrete and structural steel bridges, 3,636 lin. ft. of guide rail, 360 rods of fencing, 123,671 cu. yds. pit-run gravel, 38,433 cu. yds. crushed gravel, 100 cu. yds. of crushed stone, 0.25 mile of light bituminous paving, 10.8 miles asphalt paving, 1.4 miles of dix-seal.

Maintenance: 61 miles of ditching, 2,016 lin. ft. of off-take ditching, 2 miles of dust laying oil, 104 miles of dust laying calcium, 2 miles of clay stabilizer, 119 miles of snow fence, 666 miles of snow clearing, 143 miles of weed spraying, 106 miles of weed cutting, 49,478 cu. yds. of pit-run gravel, 11,384 cu. yds. of crushed gravel, 400 cu. yds. slag, 1,338 cu. yds. crushed stone, 242 tons of crushed stone, 29 bridges repaired, 139 culverts repaired.

Purchases: 2 new motor graders, 1 used motor grader, 1 one-way snowplough and wing, 1 gas-powered rock drill, 0.75 acre of land.

Statute Labour and Unorganized Units—Construction: 397 acres of clearing and grubbing, 7 miles of new grade, 120 culverts — 2 wood, 3 metal arch, 1,585 cu. yds. rock removed, 230 lin. ft. of guide rail, 20,450 cu. yds. pit-run gravel, 4,120 cu. yds. crushed gravel.

Maintenance: 43 miles roadside ditching, 3,800 lin. ft. off-take ditching, 10 miles of weed and brush cutting, 16 miles of snow fence, 229 miles of snowploughing, 34,048 cu. yds. of pit-run gravel, 6,082 cu. yds. of crushed gravel, 11 bridges repaired, 51 culverts repaired, 2 scows repaired.

DISTRICT No. 18—(18 organized townships, 1 improvement district, 8 urban municipalities, 9 Indian reserves, 20 statute labour boards, 40 unorganized units)

Townships—Construction: 18.25 miles new grade using 75,314 cu. yds. pit-run gravel, 11,790 cu. yds. crushed gravel and 5,459 cu. yds. crushed slag, 2½ miles hot mix asphalt paving, 5,015 sq. yds. sodding, 1,200 lin. ft. guide rail, 100 rods fencing, 122 pipe culverts, 17 wooden culverts, 3 structural plate arch culverts, 1 creosoted timber bridge camp-site deck, 3 acres right-of-way purchased, 35 acres gravel pit purchased, 1 grader shed built.

Maintenance: 97 miles roadside ditching, 10,300 lin. ft. off-take ditching, 7.25 miles oil dust layer, 64.50 miles calcium dust layer, 38 miles snow fence erected, 735 miles snowploughed, 78 miles weed spraying, 106 miles weed and brush cutting, 67,000 cu. yds. pit-run gravel, 15,800 cu. yds. crushed gravel, 10,800 cu. yds. crushed slag, 30 bridges repaired, 163 pipe culverts repaired.

Purchases: 1 4-ton truck, 1 Hough pay loader, 1 power brush saw.

Statute Labour and Unorganized Units—Construction: 4 acres cleared and grubbed, 3.60 miles new grade, 98 pipe culverts, 3 creosoted wooden bridges, 9,700 cu. yds. pit-run gravel.

Maintenance: 37 miles roadside ditching, 132 lin. ft. off-take ditching, 32 miles weeds and brush cut, 2 miles snow fence erected, 149 miles snowploughed, 43,900 cu. yds. pit-run gravel, 8 bridges repaired, 50 culverts repaired.

DISTRICT No. 19—(11 townships, 3 urban municipalities, 8 improvement districts, 22 statute labour boards, 7 unorganized units, 2 Indian reserves)

Townships and Improvement Districts—Construction: 127 acres cleared, 6.15 miles of grade, 220 culverts — 38 wood, 1 concrete, 4 wooden and 3 steel bridges, 150 lin. ft. of guide rail, 800 ft. underdrainage, 14,907 cu. yds. pit-run gravel, 8,424 cu. yds. crushed gravel, 9.11 miles of asphalt paving.

Maintenance: 70.92 miles roadside ditching, 230 ft. off-take ditching, 10.05 miles of surface treating, 22.20 miles dust laying oil, 35.8 miles dust laying calcium chloride, 145.2 miles of snow fence, 815.25 miles of snow clearing, 28.5 miles weed spraying, 312.75 miles of weed cutting, 63,799 cu. yds. pit-run gravel, 21,695 cu. yds. crushed gravel, 658 cu. yds. crushed stone, 38 bridges repaired, 215 culverts repaired.

Purchases: 1 tractor with front-end loader, 1 truck, 1 grader, 1 snow wing, 1 sand spreader, 1 road sweeping attachment for Hough pay loader.

Statute Labour and Unorganized Units—Construction: 10.72 miles new grade, 38,275 cu. yds. of pit-run gravel, 193 pipe culverts installed, 41 wood culverts, 10 wooden bridges.

Maintenance: 86.42 miles of roadside ditching, 23.35 miles of off-take ditching, 166 miles of weed cutting, 53.5 miles snow fencing, 408¼ miles snowploughing, 42,407 cu. yds. pit-run gravel, 25 cu. yds. crushed stone, 13 bridges repaired, 142 culverts repaired.

DISTRICT No. 20—(15 townships, 3 improvement districts, 6 urban municipalities, 27 statute labour boards, 5 Indian reserves, 22 unorganized units)

Townships—Construction: 1 acre of clearing and grubbing, 4.3 miles of grade, 17 C.I.P. culverts, 14 wood culverts, 6 wood bridges, 2,342 cu. yds. of pit gravel on 0.2 mile of grade and 85 cu. yds. of crushed stone on 0.2 mile of grade.

Maintenance: 20.6 miles of roadside ditching, 7,140 lin. ft. of off-take ditching, 3 miles of bituminous surface treatment, 4 miles of oil dust layer, 10.6 miles of calcium chloride dust layer, 98.5 miles snow fence erected, 713.8 miles snow clearing, 73.5 miles weed spraying, 282.5 weed cutting, 49,317 cu. yds. pit-run gravel, 3,444 cu. yds. crushed gravel, 3,175 cu. yds. crushed stone, 14 bridges repaired, 131 culverts repaired, 20.65 acres of land purchased.

Purchases: Material for shelter for power grader, 1 fire pump, 1 spot brush sprayer.

Statute Labour Townships and Unorganized Units—Construction: 19 acres of clearing and grubbing, 4.62 miles of grade, 246 C.I.P. culverts, 17 wood culverts, 10,493 cu. yds. pit-run gravel on 6.65 miles of road, 60 cu. yds. of crushed gravel.

Maintenance: 41.45 miles roadside ditching, 2,770 lin. ft. of off-take ditching, 74.65 miles of weed and brush cutting, 26.30 miles of snow fence erected, 297.93 miles of snowploughing of Statute Labour and Association Roads, 51,314 cu. yds. pit-run gravel, 380 cu. yds. crushed gravel, 23 bridges repaired, 176 culverts repaired.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS,
CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED
TOWNSHIPS, BY COUNTIES AND DISTRICTS

April 1st, 1960 to March 31st, 1961

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway No. 2.....	\$ 48,801.51	\$ 90,455.42	\$ 139,256.93
" " 5.....	7,563.82	21,536.40	29,100.22
" " 24.....	288,517.20	33,028.69	321,545.89
" " 24A.....	75.05	12,333.89	12,408.94
" " 53.....	1,518.65	37,093.41	38,612.06
" " 54.....	393,589.52	35,794.07	429,383.59
" " 99.....	.....	11,091.66	11,091.66
" " 403.....	9,916.34	.....	9,916.34
Miscellaneous Surveys.....	8,832.45	.....	8,832.45
Connecting Links.....	11,782.79	549.87	12,332.66
	\$ 770,597.33	\$ 241,883.41	\$1,012,480.74
Bruce:			
Highway No. 4.....	\$ 467,643.43	\$ 49,858.80	\$ 517,502.23
" " 6.....	360,945.17	143,731.16	504,676.33
" " 9.....	59,663.29	58,006.97	117,670.26
" " 21.....	65,157.47	107,244.00	172,401.47
" " 86.....	71.54	15,431.72	15,503.26
Miscellaneous Survey.....	195.40	.....	195.40
Connecting Links.....	11,435.49	8,400.44	19,835.93
Development Road:			
Sauble Beach By-pass.....	205,237.32	.....	205,237.32
	\$1,170,349.11	\$ 382,673.09	\$1,553,022.20
Carleton:			
Highway No. 15.....	\$ 654,272.03	\$ 46,231.80	\$ 700,503.83
" " 16.....	235,340.11	58,756.51	294,096.62
" " 17.....	107,248.43	83,446.13	190,694.56
" " 29.....	139,714.97	5,940.56	145,655.53
" " 31.....	19,408.04	56,001.58	75,409.62
" " 44.....	661.71	14,416.62	15,078.33
Queensway, Ottawa.....	5,699,668.92	14,094.74	5,713,763.66
Miscellaneous Surveys.....	300.10	.....	300.10
Connecting Links.....	189,680.21	.....	189,680.21
Development Roads:			
Nepean Swamp Road.....	19,790.04	.....	19,790.04
Munster Sideroad.....	.....	15,834.94	15,834.94
Connaught Ranges, Torbolton.....	.....	Cr. 154.00	Cr. 154.00
North Gower River Road.....	.....	6,600.42	6,600.42
Fitzroy-Torbolton Boundary Road.....	30,010.04	.....	30,010.04
Herbert's Corners — Gloucester.....	2,724.48	.....	2,724.48
County Road No. 26.....	138,400.25	.....	138,400.25
Carp Northerly.....	19,917.85	.....	19,917.85
	\$7,257,137.18	\$ 301,169.30	\$7,558,306.48
Dufferin:			
Highway No. 9.....	\$ 66,646.13	\$ 47,582.17	\$ 114,228.30
" " 10.....	456,841.80	52,393.43	509,235.23
" " 24.....	5,440.78	23,177.43	28,618.21
" " 89.....	1,550.04	19,107.34	20,657.38
" " 104.....	2,326.59	3,900.34	6,226.93
" " 136.....	.....	467.25	467.25

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Dufferin (Cont'd):			
Connecting Links.....	\$	\$ 2,012.96	\$ 2,012.96
Development Roads:			
Mount Forest - Shelburne.....	56,744.83	.....	56,744.83
Relessey Road.....	1,839.80	.....	1,839.80
	\$ 591,389.97	\$ 148,640.92	\$ 740,030.89
Elgin:			
Highway No. 3.....	\$ 457,597.05	\$ 87,778.25	\$ 545,375.30
" " 4.....	2,572.24	31,137.58	33,709.82
" " 19.....	2,386.76	20,837.31	23,224.07
" " 73.....	3,805.18	21,201.02	25,006.20
" " 74.....	3,423.04	10,473.05	13,896.09
" " 76.....	25,737.59	16,539.78	42,277.37
" " 401.....	355,214.70	2,477.42	357,692.12
Connecting Links.....	.....	5,017.50	5,017.50
Development Roads:			
Calton-Griffin's Corners.....	142,143.37	.....	142,143.37
Chatham Street.....	61,249.45	.....	61,249.45
	\$1,054,129.38	\$ 195,461.91	\$1,249,591.29
Essex:			
Highway No. 2.....	\$ 63,584.29	\$ 33,037.15	\$ 96,621.44
" " 3.....	13,626.50	59,968.82	73,595.32
" " 3B.....	573,739.48	6,308.45	580,047.93
" " 18.....	90,738.63	51,482.60	142,221.23
" " 18A.....	4,268.23	15,518.40	19,786.63
" " 39.....	336,799.17	19,284.05	356,083.22
" " 98.....	5,093.39	29,755.51	34,848.90
" " 107.....	3,528.41	1,053.70	4,582.11
" " 114.....	29.54	995.38	1,024.92
" " 401.....	301,945.55	86,201.38	388,146.93
Pelee Island.....	.....	26,604.00	26,604.00
Miscellaneous Surveys.....	11.77	.....	11.77
Connecting Links.....	17,310.46	3,193.59	20,504.05
	\$1,410,675.42	\$ 333,403.03	\$1,744,078.45
Frontenac:			
Highway No. 2.....	\$ 422,251.85	\$ 42,673.64	\$ 464,925.49
" " 7.....	242,714.17	59,930.58	302,644.75
" " 15.....	6,721.02	39,195.27	45,916.29
" " 33.....	78,353.12	9,851.90	88,205.02
" " 38.....	538,587.49	93,949.33	632,536.82
" " 41.....	6,056.02	11,282.46	17,338.48
" " 95.....	.....	13,180.53	13,180.53
" " 96.....	12,002.10	36,144.14	48,146.24
" " 401.....	559,237.08	59,446.54	618,683.62
Secondary Highway No. 506.....	53,893.91	43,962.98	97,856.89
Secondary Highway No. 509.....	138,104.22	26,713.59	164,817.81
Connecting Link.....	3,533.93	.....	3,533.93
Development Roads:			
Perth Road.....	66,266.54	.....	66,266.54
Mass Road-County Road No. 8 (Part)	63,843.76	.....	63,843.76
Snow Road-Ompah Road.....	40,569.73	.....	40,569.73
Conc. 3 and 4 Pittsburg Road.....	15,000.00	.....	15,000.00
Sydenham-Otter Lake.....	19,570.09	.....	19,570.09
Crow Lake Road.....	29,986.27	.....	29,986.27
Plevna-Ompah.....	37,280.78	.....	37,280.78
Harlow-Arden (Part).....	21,794.26	.....	21,794.26
Parkham-Wagarville.....	25,004.76	.....	25,004.76
Wilson-Vennacher (Part).....	13,784.89	.....	13,784.89
	\$2,394,555.99	\$ 436,330.96	\$2,830,886.95

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Grey:			
Highway No. 4.....	\$ 16,901.04	\$ 57,652.07	\$ 74,553.11
“ “ 6.....	119,587.19	97,349.54	216,936.73
“ “ 10.....	8,911.25	69,632.90	78,544.15
“ “ 21.....	14,659.83	17,417.11	32,076.94
“ “ 24.....	1,128.26	6,633.81	7,762.07
“ “ 26.....	13,921.48	83,283.87	97,205.35
Sidewalks:			
Town of Flesherton.....	725.88	.....	725.88
Connecting Links.....	.....	7,720.50	7,720.50
Development Roads:			
Mount Forest-Shelburne.....	184,844.88	.....	184,844.88
Flesherton-Singhampton.....	452,793.31	.....	452,793.31
Conc. 4 and 5 Derby Township.....	37,100.39	.....	37,100.39
	\$ 850,573.51	\$ 339,689.80	\$1,190,263.31
Haldimand:			
Highway No. 3.....	\$ 154,415.71	\$ 137,289.43	\$ 291,705.14
“ “ 6.....	980,781.40	56,157.77	1,036,939.17
“ “ 54.....	93,869.46	47,651.72	141,521.18
“ “ 56.....	5,346.69	12,562.11	17,908.80
Connecting Links.....	431,304.93	2,352.86	433,657.79
Development Roads:			
Grand River Road.....	222,691.41	.....	222,691.41
Old Indian Line.....	5,390.68	.....	5,390.68
	\$1,893,800.28	\$ 256,013.89	\$2,149,814.17
Halton:			
Highway No. 2.....	\$ 18,814.67	\$ 93,315.48	\$ 112,130.15
“ “ 5.....	327,469.20	72,977.62	400,446.82
“ “ 6.....	.....	4,939.54	4,939.54
“ “ 7.....	114,655.14	37,171.92	151,827.06
“ “ 20.....	2,193.20	1,008.21	3,201.41
“ “ 25.....	12,581.43	103,423.80	116,005.23
“ “ 122.....	92.64	18,670.32	18,762.96
“ “ 401.....	1,720,578.56	89,891.83	1,810,470.39
“ “ 403.....	190,475.11	.....	190,475.11
Queen Elizabeth Way.....	1,078,384.06	388,094.29	1,466,478.35
Miscellaneous Surveys.....	215.72	.....	215.72
Connecting Links.....	.....	5,756.02	5,756.02
	\$3,465,459.73	\$ 815,249.03	\$4,280,708.76
Hastings:			
Highway No. 2.....	\$ 30,268.90	\$ 59,817.18	\$ 90,086.08
“ “ 7.....	53,046.80	46,311.97	99,358.77
“ “ 14.....	2,048.52	46,270.68	48,319.20
“ “ 28.....	2,533.49	29,922.17	32,455.66
“ “ 33.....	143,674.95	20,082.93	163,757.88
“ “ 37.....	438,162.44	57,230.97	495,393.41
“ “ 62.....	109,701.17	164,894.43	274,595.60
“ “ 109.....	2,100.46	13,306.14	15,406.60
“ “ 127.....	236.48	13,518.63	13,755.11
“ “ 401.....	224,957.34	70,239.07	295,196.41
Secondary Highway No. 500.....	163,052.60	51,628.03	214,680.63
“ “ “ 502.....	126.01	5,152.02	5,278.03
“ “ “ 517.....	.....	10,565.83	10,565.83
“ “ “ 620.....	12,324.87	23,581.85	35,906.72
Miscellaneous Surveys.....	726.76	.....	726.76
Sidewalks:			
Village of Foxboro.....	1,621.66	.....	1,621.66
Connecting Links.....	.....	7,468.40	7,468.40
Development Roads:			
Foxboro Road (Part).....	19,893.58	.....	19,893.58

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Hastings (Cont'd):			
Halloway By-pass.....	\$ 18,910.21	\$	\$ 18,910.21
Ridge Road.....	28,018.62	.....	28,018.62
Bird's Creek-Baptiste.....	14,938.87	.....	14,938.87
Purdy-Centreview-Bell Rapids.....	4,443.85	.....	4,443.85
Rannockburn-Cooper.....	20,512.85	.....	20,512.85
Sulphide-Tweed.....	92,197.19	.....	92,197.19
Concessions 11 and 12, Huntington Township.....	4,993.07	.....	4,993.07
Sideroad 15/16 Wollaston Twp.....	23,127.21	.....	23,127.21
Highway No. 62-Gilmour.....	3,789.67	.....	3,789.67
Madoc Boundary west to Concession 6..	25,834.92	.....	25,834.92
Sideroad 22/23-Tyendinaga Twp.....	4,492.54	.....	4,492.54
Madoc-Foxboro (Part)			
County Road No. 1.....	14,860.37	.....	14,860.37
Detlor Road (Part).....	19,125.77	.....	19,125.77
Concessions 4 and 5 (Part)			
Thurlow Township.....	1,535.82	.....	1,535.82
	\$1,481,256.99	\$ 619,990.30	\$2,101,247.29
Huron:			
Highway No. 4.....	\$ 71,349.97	\$ 93,657.14	\$ 165,007.11
" " 8.....	1,779.84	53,021.02	54,800.86
" " 9.....	124.88	1,060.55	1,185.43
" " 21.....	958,724.40	98,200.75	1,056,925.15
" " 23.....	77.44	7,028.19	7,105.63
" " 81.....	385.91	13,400.02	13,785.93
" " 83.....	4,727.17	27,001.33	31,728.50
" " 84.....	3,049.96	12,697.27	15,747.23
" " 86.....	35,391.09	53,778.31	89,169.40
" " 87.....	216.46	26,519.77	26,736.23
Connecting Links.....		11,675.40	11,675.40
Development Road: Dunlop-Blyth Road.....	195,505.33	.....	195,505.33
	\$1,271,332.45	\$ 398,039.75	\$1,669,372.20
Kent:			
Highway No. 2.....	\$ 473,069.75	\$ 38,716.79	\$ 511,786.54
" " 3.....	116,319.89	79,667.72	195,987.61
" " 21.....	3,011.53	33,096.95	36,108.48
" " 40.....	858,775.15	30,318.48	889,093.63
" " 78.....	4,377.11	8,809.86	13,186.97
" " 79.....	138.76	3,349.94	3,488.70
" " 98.....	16,263.36	20,792.36	37,055.72
" " 401.....	1,380,119.67	3.80	1,380,123.47
Miscellaneous Surveys.....	26.46	.....	26.46
Sidewalks: Village of Mirlim.....	513.05	.....	513.05
Connecting Links.....		8,698.90	8,698.90
Development Road: Highgate-Highway No. 3.....	40,008.99	.....	40,008.99
	\$2,892,623.72	\$ 223,454.80	\$3,116,078.52
Lambton:			
Highway No. 7.....	\$ 618,449.93	\$ 93,512.58	\$ 711,962.51
" " 21.....	46,346.50	65,021.03	111,367.53
" " 22.....	8.88	2,253.68	2,262.56
" " 40.....	68,942.62	44,027.48	112,970.10
" " 78.....		149.55	149.55
" " 79.....	4,590.17	35,171.94	39,762.11
" " 80.....	159,388.20	4,202.04	163,590.24
" " 81.....	537.96	.....	537.96
" " 82.....	1,579.75	7,166.69	8,746.44

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lambton (Cont'd):			
Highway No. 402.....	\$ 34,883.92	\$ 9,983.48	\$ 44,867.40
Sidewalks:			
Village of Froomfield.....	433.42	.....	433.42
Village of Corunna.....	380.66	.....	380.66
Connecting Links.....	31,906.34	2,444.31	34,350.65
Development Roads:			
Alvinston-Courtright.....	660,428.73	.....	660,428.73
Plympton-Bosanquet.....	24,031.88	.....	24,031.88
	\$1,651,908.96	\$ 263,932.78	\$1,915,841.74
Lanark:			
Highway No. 7.....	\$ 28,468.30	\$ 35,463.15	\$ 63,931.45
" " 15.....	384,718.18	86,977.65	471,695.83
" " 29.....	190,240.29	96,684.43	286,924.72
" " 44.....	.....	3,381.14	3,381.14
Secondary Highway No. 511.....	6,920.86	14,934.83	21,855.69
Miscellaneous Surveys.....	236.90	.....	236.90
Connecting Links.....	43,203.90	16.40	43,220.30
Development Roads:			
French Line Road.....	.....	9,714.18	9,714.18
Maberly-Bolingbroke.....	1,752.00	.....	1,752.00
Concessions 5 and 6, Harley Twp.....	78,026.40	.....	78,026.40
Flowerdale.....	4,904.85	.....	4,904.85
Lanark-Dalhousie.....	6,777.28	.....	6,777.28
Merrywood Road.....	15,600.00	.....	15,600.00
Smith Falls-North Gower (Part).....	76,537.77	.....	76,537.77
Bellamy Road.....	14,226.39	.....	14,226.39
Fallbrook westerly.....	13,572.71	.....	13,572.71
Brightside-Hopetown.....	1,326.28	.....	1,326.28
	\$ 866,512.11	\$ 247,171.78	\$1,113,683.89
Leeds and Grenville:			
Highway No. 2.....	\$ 36,287.74	\$ 189,079.37	\$ 225,367.11
" " 15.....	576,052.99	70,527.66	646,580.65
" " 16.....	176,153.67	50,546.18	226,699.85
" " 29.....	958.26	49,056.42	50,014.68
" " 32.....	113,905.42	24,033.02	137,938.44
" " 42.....	4,253.34	59,482.18	63,735.52
" " 401.....	3,987,979.39	106,464.18	4,094,443.57
Hill Island Road.....	4,090.70	3,374.24	7,464.94
Miscellaneous Surveys.....	90.26	.....	90.26
Connecting Links.....	89,406.33	178.82	89,585.15
Development Roads:			
Athens-Charleston.....	21,705.79	.....	21,705.79
Maynard-South Augusta Road.....	13,823.19	.....	13,823.19
Houghton Bay Road.....	2,981.46	.....	2,981.46
Escott-Rockport.....	1,993.15	.....	1,993.15
Athens-Mallorytown.....	55,679.90	.....	55,679.90
Westport-Bedford Mills County Road No. 11 (Part).....	63,477.39	.....	63,477.39
Kemptville easterly-County Road No. 24.....	29,293.71	.....	29,293.71
Lilly's Corners-Lyndhurst.....	28,999.83	.....	28,999.83
Bay Road.....	12,080.20	.....	12,080.20
Warburton-Long Point.....	98,996.27	.....	98,996.27
Glen Smail West Road.....	24,793.93	.....	24,793.93
Highway No. 16-District Hospital.....	3,485.64	.....	3,485.64
	\$5,346,488.56	\$ 552,742.07	\$5,899,230.63
Lennox and Addington:			
Highway No. 2.....	\$ 13,499.39	\$ 63,742.16	\$ 77,241.55
" " 7.....	12,290.02	19,480.22	31,770.24

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lennox and Addington (Cont'd):			
Highway No. 33.....	\$ 84,505.26	\$ 50,977.22	\$ 135,482.48
" " 41.....	671,410.21	105,252.79	776,663.00
" " 401.....	1,494,795.00	71.94	1,494,866.94
Ferries.....	3,227.70	69,102.22	72,329.92
Secondary Highway No. 500.....	2,229.74		2,229.74
" " 502.....	10,853.87	9,626.47	20,480.34
Miscellaneous Surveys.....	52.87		52.87
Development Roads:			
Croydon-Reidville.....	14,975.67		14,975.67
Tamsworth-Centreville.....	25,180.14		25,180.14
Flinton Road.....	56,171.15		56,171.15
Hay Bay Road.....	20,969.86		20,969.86
Wilson-Vennacher (Part).....	15,051.73		15,051.73
Odessa northerly-County Road No. 1..	1,845.51		1,845.51
	\$2,427,058.12	\$ 318,253.02	\$2,745,311.14
Lincoln:			
Highway No. 8.....	\$ 91,083.42	\$ 84,893.45	\$ 175,976.87
" " 8A.....	4,011.92	6,943.78	10,955.70
" " 20.....	8,487.53	58,928.10	67,415.63
" " 57.....	11,008.70	8,223.92	19,232.62
" " 58.....	6,977.13	9,758.43	16,735.56
" " 405.....	431,844.47		431,844.47
Queen Elizabeth Way.....	3,754,635.35	176,261.39	3,930,896.74
Miscellaneous Surveys.....	8,950.59		8,950.59
Connecting Links.....		2,373.11	2,373.11
	\$4,316,999.11	\$ 347,382.18	\$4,664,381.29
Middlesex:			
Highway No. 2.....	\$ 196,276.57	\$ 114,458.90	\$ 310,735.47
" " 4.....	120,651.21	72,174.54	192,825.75
" " 7.....	238,135.31	71,123.35	309,258.66
" " 22.....	30,993.30	226,902.40	257,895.70
" " 23.....	1,257.39	13,219.08	14,476.47
" " 73.....	8,790.37	11,095.71	19,886.08
" " 74.....	1,867.64	26,143.55	28,011.19
" " 76.....	11,419.05	2,432.36	13,851.41
" " 80.....	250,578.85	20,046.91	270,625.76
" " 81.....	96,123.60	105,831.69	201,955.29
" " 126.....	103,786.92		103,786.92
" " 135.....	9,784.43	6,130.33	15,914.76
" " 401.....	284,414.34	115,324.46	399,738.80
Miscellaneous Surveys.....	11,460.23		11,460.23
Sidewalks:			
Village of Melbourne.....	752.00		752.00
Connecting Links.....	3,650.00	4,907.23	8,557.23
Development Road:			
Highway No. 7-Clandeboye.....	12,339.11		12,339.11
	\$1,382,280.32	\$ 789,790.51	\$2,172,070.83
Norfolk:			
Highway No. 3.....	\$ 499,293.79	\$ 62,175.81	\$ 561,469.60
" " 6.....		25,516.31	25,516.31
" " 19.....		4,129.98	4,129.98
" " 24.....	8,096.54	69,316.58	77,413.12
" " 59.....		3,944.82	3,944.82
Connecting Links.....		676.23	676.23
Development Roads:			
Long Point Park Road.....	246.74		246.74
Courtland-Port Rowan.....	538,974.45		538,974.45
	\$1,046,611.52	\$ 165,759.73	\$1,212,371.25

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Northumberland and Durham:			
Highway No. 2.....	\$ 17,744.50	\$ 205,278.46	\$ 223,022.96
" " 7.....		808.04	808.04
" " 7A.....	867,862.22	51,473.76	919,335.98
" " 28.....	1,812.00	47,885.37	49,697.37
" " 30.....	3,047.67	55,720.44	58,768.11
" " 33.....	7,141.44	9,553.76	16,695.20
" " 35.....	3,440.65	62,354.05	65,794.70
" " 45.....	595,289.21	67,939.06	663,228.27
" " 106.....		7,728.39	7,728.39
" " 115.....	15,418.98	39,549.62	54,968.60
" " 401.....	4,514,323.09	199,112.42	4,713,435.51
Connecting Links.....	6,250.00	12,687.84	18,937.84
Development Roads:			
Morganston-Cuff's Corners.....	195,181.18		195,181.18
Kendal-Garden Hill.....	252,002.35		252,002.35
	\$6,479,513.29	\$ 760,091.21	\$7,239,604.50
Ontario:			
Highway No. 2.....	\$ 79,612.68	\$ 137,174.32	\$ 216,787.00
" " 7.....	15,036.60	99,581.06	114,617.66
" " 7A.....	253,816.11	10,063.12	263,879.23
" " 12.....	162,803.84	133,688.49	296,492.33
" " 47.....	11,924.58	79,317.77	91,242.35
" " 48.....	151.51	21,010.56	21,162.07
" " 69.....	50.00	38,855.83	38,905.83
" " 401.....	965,429.16	164,710.68	1,130,139.84
Secondary Highway No. 503.....	287.51		287.51
Miscellaneous Surveys.....	780.72		780.72
Connecting Links.....		5,781.97	5,781.97
Development Roads:			
Manchester-Goodwood.....	244,946.03		244,946.03
County Road No. 1.....	20,000.00		20,000.00
	\$1,754,838.74	\$ 690,183.80	\$2,445,022.54
Oxford:			
Highway No. 2.....	\$ 14,216.38	\$ 92,674.84	\$ 106,891.22
" " 3.....	8,411.93	5,696.49	14,108.42
" " 19.....	613,202.34	51,322.91	664,525.25
" " 53.....	591.82	11,195.01	11,786.83
" " 59.....	1,782.57	42,292.27	44,074.84
" " 97.....	161,461.50	47,574.24	209,035.74
" " 100.....	374,604.58	38,010.72	412,615.30
" " 401.....	1,908,259.18	87,107.64	1,995,366.82
" " 403.....	325.52		325.52
Miscellaneous Surveys.....	94.56		94.56
Sidewalks:			
Village of Plattsville.....	787.37		787.37
Connecting Links.....	5,603.24	1,566.67	7,169.91
	\$3,089,340.99	\$ 377,440.79	\$3,466,781.78
Peel:			
Highway No. 2.....	\$ 89,265.72	\$ 51,291.37	\$ 140,557.09
" " 5.....	127,646.39	64,949.05	192,595.44
" " 7.....	211,264.79	49,867.04	261,131.83
" " 9.....	14,694.15	28,815.84	43,509.99
" " 10.....	207,527.97	141,951.21	349,479.18
" " 24.....	12,803.44	13,982.68	26,786.12
" " 50.....	87,682.61	69,353.08	157,035.69
" " 122.....	12,274.00	7,710.45	19,984.45
" " 136.....	22,366.56	20,558.69	42,925.25
" " 401.....	13,912.28	122,841.58	136,753.86
" " 403.....	602.01		602.01

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Peel (Cont'd):			
Queen Elizabeth Way.....	\$1,312,610.37	\$ 98,230.59	\$1,410,840.96
Miscellaneous Surveys.....	66.36	.....	66.36
Connecting Links.....	14,748.35	4,087.70	18,836.05
Development Roads:			
Fourth Line Road, Albion Twp.....	39,938.40	.....	39,938.40
Heart Lake Road.....	166,525.16	.....	166,525.16
	\$2,333,928.56	\$ 673,639.28	\$3,007,567.84
Perth:			
Highway No. 7.....	\$ 134,650.60	\$ 72,548.92	\$ 207,199.52
" " 8.....	19,347.85	41,753.58	61,101.43
" " 19.....	528,219.59	51,260.72	579,480.31
" " 23.....	74,805.56	104,544.73	179,350.29
" " 83.....	.....	3,846.94	3,846.94
" " 86.....	3,664.05	44,767.81	48,431.86
" " 100.....	96.62	5,089.17	5,185.79
Miscellaneous Surveys.....	8.60	.....	8.60
Sidewalks:			
Hamlet of Sebringville.....	326.00	.....	326.00
Connecting Links.....	77,903.43	10,087.06	87,990.49
Development Road:			
Millbank Road.....	187,959.84	.....	187,959.84
	\$1,026,982.14	\$ 333,898.93	\$1,360,881.07
Peterborough:			
Highway No. 7.....	\$ 567,210.59	\$ 91,274.08	\$ 658,484.67
" " 7A.....	138.67	.....	138.67
" " 28.....	20,514.05	84,393.81	104,907.86
" " 30.....	.....	4,624.74	4,624.74
" " 36.....	26,360.15	47,195.80	73,555.95
" " 45.....	67,103.20	9,025.26	76,128.46
" " 115.....	15,112.16	.....	15,112.16
" " 121.....	.....	3,376.80	3,376.80
Secondary Highway No. 500.....	.....	8,228.44	8,228.44
" " " 504.....	93,709.91	61,953.26	155,663.17
" " " 507.....	6,734.27	36,397.28	43,131.55
Miscellaneous Surveys.....	102.36	.....	102.36
Connecting Links.....	845.25	563.61	1,408.86
Development Roads:			
Church Line Road.....	4,973.29	.....	4,973.29
Katchiwano Lake Road.....	40,524.37	.....	40,524.37
Hastings-Keene.....	152,625.33	.....	152,625.33
Port Cunningham Road.....	6,496.37	.....	6,496.37
	\$1,002,449.97	\$ 347,033.08	\$1,349,483.05
Prescott and Russell:			
Highway No. 17.....	\$ 34,793.44	\$ 180,938.80	\$ 215,732.24
" " 34.....	302.34	18,333.13	18,635.47
Sidewalks:			
Village of Plantagenet.....	347.96	.....	347.96
Connecting Links.....	.....	4,488.06	4,488.06
Development Roads:			
Fournier-Routhier.....	Cr. 17.06	.....	Cr. 17.06
Vankleek Hill westerly.....	92,362.53	.....	92,362.53
Rose Corners-St. Isidore.....	107,704.54	.....	107,704.54
Rose Corners-Cambridge Boundary.....	15,707.84	.....	15,707.84
	\$ 251,201.59	\$ 203,759.99	\$ 454,961.58
Prince Edward:			
Highway No. 14.....	\$ 749,679.66	\$ 31,242.34	\$ 780,922.00
" " 33.....	299,481.41	57,459.73	356,941.14
" " 41.....	2,195.31	17,932.30	20,127.61

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Prince Edward (Cont'd):			
Ferries	\$ 3,227.70	\$ 69,102.22	\$ 72,329.92
Miscellaneous Surveys.....	27.57		27.57
Development Roads:			
Picton-Black River.....	Cr. 427.51		Cr. 427.51
Scobie Road	83,137.83		83,137.83
	\$1,137,321.97	\$ 175,736.59	\$1,313,058.56
Renfrew:			
Highway No. 17	\$ 973,427.59	\$ 239,291.30	\$1,212,718.89
" " 29	14,950.64	1,036.15	15,986.79
" " 41	82,163.21	73,964.01	156,127.22
" " 60	446,093.40	61,490.14	507,583.54
" " 62	772,943.84	37,392.42	810,336.26
" " 132	468,175.95	18,996.37	487,172.32
Secondary Highway No. 500	388.74		388.74
" " " 508	66,259.26	24,242.80	90,502.06
" " " 511	9,038.84	7,293.04	16,331.88
" " " 512	143,434.37	40,667.63	184,102.00
" " " 513	Cr. 112.40	22,676.13	22,563.73
" " " 515	63,776.58	27,916.37	91,692.95
" " " 517		7,164.40	7,164.40
" " " 521	4,173.21	13,050.06	17,223.27
" " " 635		4,183.70	4,183.70
Miscellaneous Surveys.....	9,392.75		9,392.75
Connecting Links		2,745.18	2,745.18
Development Roads:			
Hardwood Lake Road.....	9,696.69		9,696.69
Kelly's Corners Cobden	39,391.97		39,391.97
Black Donald-Matawatchan.....	10,344.27		10,344.27
McGrath Road-Clontarf.....	27,682.47		27,682.47
Concessions 6 and 7, Westmeath Twp..	15,241.68		15,241.68
Admanston-Bagot Townline.....	16,097.03		16,097.03
Sand Point Road.....	41,590.99		41,590.99
Germanicus Road	7,905.64		7,905.64
Highway 62-Locksley.....	1,866.13		1,866.13
Wilno southerly to Radcliffe Boundary..	4,592.41		4,592.41
	\$3,228,515.26	\$ 582,109.70	\$3,810,624.96
Simcoe:			
Highway No. 9	\$ 32,690.06	\$ 30,181.61	\$ 62,871.67
" " 11	1,173,384.37	198,179.74	1,371,564.11
" " 12	174,424.12	73,362.92	247,787.04
" " 24	8,477.30	32,136.82	40,614.12
" " 26	12,521.38	87,228.01	99,749.39
" " 27	30,393.52	161,857.78	192,251.30
" " 56	25.00		25.00
" " 88	775.00	29,553.11	30,328.11
" " 89	95,460.95	38,268.96	133,729.91
" " 90	14,630.77	36,480.94	51,111.71
" " 91	1,103.28	32,965.70	34,068.98
" " 92	356,510.45	22,104.62	378,615.07
" " 93	401,261.08	40,273.05	441,534.13
" " 103	431.10	6,730.96	7,162.06
" " 400	1,066,000.75	244,881.84	1,310,882.59
Miscellaneous Surveys...	3,323.00		3,323.00
Sidewalks:			
Village of Nottawa.....	989.25		989.25
Connecting Links	224,966.29	13,790.63	238,756.92
Development Roads:			
Champlain Road	39,141.96		39,141.96
15th Sideroad, Flos Township...	32,269.26		32,269.26
Loretto Road	414,817.93		414,817.93
Essa-Innisfil Townline	137.80		137.80

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
River Road through Springdale.....	\$ 20,393.17	.....	\$ 20,393.17
Highway 26-Wasaga Beach.....	3,315.47	.....	3,315.47
	\$4,107,443.26	\$1,047,996.69	\$5,155,439.95
Stormont, Dundas and Glengarry:			
Highway No. 2.....	\$ 19,945.81	\$ 157,178.71	\$ 177,124.52
“ “ 31.....	46,005.90	45,461.21	91,467.11
“ “ 34.....	447.13	202,854.84	203,301.97
“ “ 43.....	3,797.46	76,107.44	79,904.90
“ “ 401.....	1,148,995.96	40,886.69	1,189,882.65
Miscellaneous Surveys.....	303.67	.....	303.67
Sidewalks:			
Town of Alexandria.....	2,687.06	.....	2,687.06
Connecting Links.....	8,409.07	1,123.45	9,532.52
Development Roads:			
Winchester westerly.....	Cr. 1,570.10	.....	Cr. 1,570.10
Highway 43-Maxville.....	Cr. 948.00	.....	Cr. 948.00
County Road No. 16.....	Cr. 757.20	.....	Cr. 757.20
Winchester-Melvin.....	5,856.19	.....	5,856.19
Hallville-Reids Mills.....	14,332.19	.....	14,332.19
Concessions 6 and 7, Williamsburg Twp.....	12,599.20	.....	12,599.20
Concessions 4 and 5, Lochiel Twp.....	17,983.96	.....	17,983.96
Concession 8 (Part) Cornwall Twp.....	18,033.90	.....	18,033.90
Concessions 7 and 8, Matilda Twp.....	21,277.42	.....	21,277.42
County Road No. 21.....	71,899.60	.....	71,899.60
	\$1,389,299.22	\$ 523,612.34	\$1,912,911.56
Victoria:			
Highway No. 7.....	\$ 83,594.17	\$ 72,501.44	\$ 156,095.61
“ “ 35.....	12,795.49	56,838.68	69,634.17
“ “ 35A.....	.....	3,018.06	3,018.06
“ “ 36.....	16,296.34	31,175.14	47,471.48
“ “ 46.....	2,307.51	55,004.72	57,312.23
“ “ 121.....	33,472.29	26,911.02	60,383.31
Secondary Highway No. 500.....	.....	8,465.98	8,465.98
“ “ “ 503.....	184,809.40	81,242.08	266,051.48
“ “ “ 505.....	120.08	14,100.12	14,220.20
Miscellaneous Surveys.....	9.21	.....	9.21
Sidewalks:			
Village of Cameron.....	.....	942.18	942.18
Connecting Links.....	.....	9,420.05	9,420.05
Development Road:			
Pidgeon Lake Road.....	42,833.36	.....	42,833.36
	\$ 376,237.85	\$ 359,619.47	\$ 735,857.32
Waterloo:			
Highway No. 7.....	\$ 26,386.75	\$ 59,893.53	\$ 86,280.28
“ “ 8.....	531,093.56	15,784.24	546,877.80
“ “ 24.....	6,940.55	16,146.23	23,086.78
“ “ 24A.....	40.51	13,797.26	13,837.77
“ “ 85.....	1,371.46	14,933.33	16,304.79
“ “ 86.....	71,403.65	39,455.28	110,858.93
“ “ 97.....	439,978.27	11,782.31	451,760.58
“ “ 401.....	3,801,777.58	17,694.51	3,819,472.09
Miscellaneous Surveys.....	130.44	.....	130.44
Connecting Links.....	.....	3,990.39	3,990.39
	\$4,879,122.77	\$ 193,477.08	\$5,072,599.85

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Welland:			
Highway No. 3.....	\$ 32,004.61	\$ 111,499.58	\$ 143,504.19
" " 3A.....	2,958.05	26,820.38	29,778.43
" " 3C.....	2,252.99	21,627.32	23,880.31
" " 8.....	22,283.00	8,029.90	30,312.90
" " 20.....	10,988.55	49,468.85	60,457.40
" " 57.....	77.10	16,742.36	16,819.46
" " 58.....	42,032.15	52,295.86	94,328.01
" " 405.....	679.06	.....	679.06
Queen Elizabeth Way.....	30,770.85	189,469.80	220,240.65
Miscellaneous Surveys.....	18,673.65	.....	18,673.65
Sidewalks:			
Township of Thorold.....	1,636.13	.....	1,636.13
Connecting Links.....	14,325.08	4,421.81	18,746.89
	\$ 178,681.22	\$ 480,375.86	\$ 659,057.08
Wellington:			
Highway No. 6.....	\$ 362,488.29	\$ 126,242.78	\$ 488,731.07
" " 7.....	7,079.46	36,229.47	43,308.93
" " 9.....	5,730.17	57,314.84	63,045.01
" " 23.....	17,656.58	6,277.07	23,933.65
" " 24.....	6,610.79	36,402.74	43,013.53
" " 86.....	6,881.79	37,532.79	44,414.58
" " 87.....	90,730.08	9,249.79	99,979.87
" " 401.....	2,319,670.36	26,374.11	2,346,044.47
Miscellaneous Surveys.....	49.98	.....	49.98
Connecting Links.....	202,421.88	6,222.23	208,644.11
Development Roads:			
Mount Forest-Shelburne.....	158,432.45	.....	158,432.45
County Road No. 65 (Part).....	90,800.53	.....	90,800.53
	\$3,268,552.36	\$ 341,845.82	\$3,610,398.18
Wentworth:			
Highway No. 2.....	\$ 43,102.23	\$ 36,810.31	\$ 79,912.54
" " 5.....	22,273.24	63,646.69	85,919.93
" " 6.....	75,810.90	95,144.25	170,955.15
" " 8.....	78,121.38	69,251.60	147,372.98
" " 20.....	188,759.84	45,705.54	234,465.38
" " 52.....	4,442.02	37,401.27	41,843.29
" " 53.....	60,777.20	28,665.85	89,443.05
" " 55.....	21,146.64	905.47	22,052.11
" " 56.....	27,553.29	22,986.13	50,539.42
" " 97.....	38,044.67	21,210.86	59,255.53
" " 99.....	7,859.42	34,619.63	42,479.05
" " 102.....	12,251.88	8,472.73	20,724.61
" " 403.....	345,090.50	.....	345,090.50
Queen Elizabeth Way.....	81,869.72	140,000.76	221,870.48
Miscellaneous Surveys.....	2,051.02	.....	2,051.02
Sidewalks:			
Village of Sheffield.....	5,140.64	.....	5,140.64
Township of Ancaster.....	37.70	.....	37.70
Connecting Links.....	600,060.78	837.23	600,898.01
	\$1,614,393.07	\$ 605,658.32	\$2,220,051.39
York:			
Highway No. 2.....	\$ 29,445.11	\$ 14,629.59	\$ 44,074.70
" " 5.....	2,086.25	5,318.17	7,404.42
" " 7.....	550,631.75	134,106.75	684,738.50
" " 9.....	2,131.02	10,790.64	12,921.66
" " 11.....	173,970.35	149,841.66	323,812.01
" " 27.....	321,334.08	177,301.82	498,635.90
" " 47.....	211,280.82	29,341.14	240,621.96
" " 48.....	481,633.79	212,264.66	693,898.45
" " 49.....	20,607.00	26,750.42	47,357.42

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
York (Cont'd):			
Highway No. 50.....	\$ 25.72	\$ 14,605.50	\$ 14,631.22
" " 400.....	244,771.98	151,200.49	395,972.47
" " 401.....	1,273,172.18	716,183.02	1,989,355.20
" " 403.....	103.47	.....	103.47
" " 404.....	600,820.39	.....	600,820.39
Queen Elizabeth Way.....	9,800.32	79,114.67	88,914.99
Queensway, Toronto.....	14,700.00	.....	14,700.00
Bloor Street, Toronto.....	50,755.48	.....	50,755.48
Yonge Street, Toronto.....	33.50	.....	33.50
Dundas Street, Toronto.....	467,759.02	.....	467,759.02
Eglinton Avenue, Toronto.....	2,500.00	.....	2,500.00
Lake Shore Road, Toronto.....	4,378.35	.....	4,378.35
Miscellaneous Surveys.....	7,489.97	.....	7,489.97
Sidewalks:			
Town of Woodbridge.....	228.02	.....	228.02
Connecting Link.....	.....	1,044.09	1,044.09
	\$4,469,658.57	\$1,722,492.62	\$6,192,151.19
DISTRICT			
Algoma-Manitoulin:			
Highway No. 17.....	\$7,722,644.50	\$ 510,095.17	\$8,232,739.67
" " 68.....	29,763.36	172,808.07	202,571.43
" " 101.....	51,941.39	237.80	52,179.19
" " 108.....	226,793.46	57,603.89	284,397.35
" " 129.....	66,104.86	218,180.28	284,285.14
Ferries.....	.....	92,828.51	92,828.51
Secondary Highway No. 538.....	.....	10,464.43	10,464.43
" " " 540.....	34,423.28	158,225.02	192,648.30
" " " 542.....	.....	93,257.46	93,257.46
" " " 546.....	34,588.38	76,123.25	110,711.63
" " " 548.....	6,199.55	108,178.18	114,377.73
" " " 550.....	117,393.37	23,981.81	141,375.18
" " " 551.....	3,710.51	24,672.98	28,383.49
" " " 552.....	488.06	10,030.44	10,518.50
" " " 553.....	.....	64,198.55	64,198.55
" " " 554.....	9,760.09	11,943.37	21,703.46
" " " 555.....	50.00	19,356.15	19,406.15
" " " 556.....	27,596.51	62,768.71	90,365.22
" " " 557.....	1,008.60	35,061.30	36,069.90
" " " 561.....	28,879.14	49,519.71	78,398.85
" " " 563.....	91.15	4,560.49	4,651.64
" " " 565.....	1,919.87	19,635.44	21,555.31
" " " 631.....	50.72	70,511.84	70,562.56
Burwash-Killarney.....	257,587.95	.....	257,587.95
Sault Ste. Marie International Bridge.....	6,012.20	.....	6,012.20
Miscellaneous Surveys.....	30,838.10	.....	30,838.10
Connecting Link.....	.....	1,195.53	1,195.53
Unincorporated Townships:			
Franz.....	.....	69.42	69.42
Campbell.....	.....	10,510.02	10,510.02
Dawson.....	.....	2,756.27	2,756.27
Mills.....	.....	5,047.89	5,047.89
Robinson.....	.....	5,998.45	5,998.45
Aberdeen.....	41,911.41	10,495.04	52,406.45
Aweres.....	.....	968.11	968.11
Cobden.....	.....	389.58	389.58
Deroche.....	.....	112.09	112.09
Fenwick.....	.....	3,758.00	3,758.00
Galbraith.....	.....	7,132.31	7,132.31
Garden River Indian Reserve.....	.....	3,834.71	3,834.71
Gaudette.....	.....	475.78	475.78
Goulais Indian Reserve.....	.....	2,271.56	2,271.56
Kars.....	.....	1,545.18	1,545.18
Kehoe.....	129.01	187.90	316.91
Lewis.....	2,836.72	655.58	3,492.30

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Mississauga Indian Reserve.....	.....	16.55	16.55
Montgomery.....	.....	748.03	748.03
Patton.....	.....	785.04	785.04
Plummer.....	913.18	3,758.34	4,671.52
Ranger Lake Area.....	.....	3,128.82	3,128.82
Rose.....	.....	2,097.68	2,097.68
Serpent River Indian Reserve.....	.....	771.05	771.05
Shedden.....	.....	13,678.17	13,678.17
Shields.....	.....	475.78	475.78
Spanish River Indian Reserve.....	7,958.49	6,690.64	14,649.13
Spragge.....	.....	192.88	192.88
Striker.....	.....	64.44	64.44
Thessalon Indian Reserve.....	.....	7.49	7.49
Township 28, Range 24.....	.....	1,747.77	1,747.77
Township 130.....	170.01	51.39	221.40
Township 131.....	170.01	51.39	221.40
Township 188.....	.....	160.00	160.00
Township 202.....	.....	364.16	364.16
Van Koughnet.....	.....	557.43	557.43
Victoria.....	.....	5,007.93	5,007.93
Wells.....	.....	7.00	7.00
Development Roads:			
Assinack-Shequandah-Bidwell.....	.....	44,282.68	44,282.68
Centre Line Road.....	20,967.55	.....	20,967.55
Fourth Line, Tarentorus Township.....	43,475.56	.....	43,475.56
Fourth Line, Korah Township.....	24,708.66	.....	24,708.66
Bar River Road.....	26,353.59	.....	26,353.59
	\$8,827,439.24	\$2,036,290.93	\$10,863,730.17
Cochrane:			
Highway No. 11.....	\$5,500,013.45	\$ 325,484.33	\$5,825,497.78
“ “ 67.....	17,864.45	41,193.98	59,058.43
“ “ 101.....	252,656.63	137,603.15	390,259.78
Ferries.....	.....	51,958.83	51,958.83
Secondary Highway No. 572.....	23,222.06	10,765.95	33,988.01
“ “ “ 574.....	20,899.46	64,051.88	84,951.34
“ “ “ 575.....	.....	4,269.08	4,269.08
“ “ “ 576.....	.....	3,962.71	3,962.71
“ “ “ 577.....	48,447.37	19,791.38	68,238.75
“ “ “ 578.....	57.13	22,505.34	22,562.47
“ “ “ 579.....	40,219.97	61,077.42	101,297.39
“ “ “ 581.....	.....	1,480.51	1,480.51
“ “ “ 583.....	14,685.28	91,091.12	105,776.40
“ “ “ 610.....	.....	16,258.68	16,258.68
“ “ “ 626.....	127,050.72	25,821.52	152,872.24
“ “ “ 629.....	12,861.47	14,033.92	26,895.39
“ “ “ 631.....	.....	7,237.80	7,237.80
Sidewalks:			
Village of Ansonville.....	595.10	.....	595.10
Connecting Links.....	.....	12,934.88	12,934.88
Unincorporated Townships:			
Deloro.....	.....	1,025.80	1,025.80
Evelyn.....	.....	4,118.58	4,118.58
German.....	.....	2,679.96	2,679.96
Godfrey.....	828.46	2,023.12	2,851.58
Jamieson.....	828.48	1,273.11	2,101.59
Macklen.....	.....	837.67	837.67
Matheson.....	.....	2,599.97	2,599.97
Ogden.....	.....	399.70	399.70
Robb.....	828.46	2,023.12	2,851.58
Shaw.....	.....	2,891.05	2,891.05
Sheraton.....	.....	837.67	837.67
Barker.....	.....	175.37	175.37
Brower.....	3,858.00	3,582.02	7,440.02
Calder.....	4,739.13	4,762.45	9,501.58

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Casgrain.....	\$	\$ 2,410.26	\$ 2,410.26
Clute.....	9,759.36	8,709.20	18,468.56
Devitt.....	7,535.03	7,352.54	14,887.57
Eilber.....	5,326.26	3,874.90	9,201.16
Fournier.....	491.04	4,107.75	4,598.79
Fox.....	2,930.08	465.41	3,395.49
Hanlan.....	1,681.66	6,865.58	8,547.24
Idington.....	.....	4,850.94	4,850.94
Kendall.....	8,817.46	11,235.78	20,053.24
Kennedy.....	.....	2,695.28	2,695.28
Lamarche.....	7,467.80	5,814.48	13,282.28
Lowther.....	.....	4,260.10	4,260.10
McCrea.....	2,442.99	2,243.29	4,686.28
Nansen.....	399.09	1,385.69	1,784.78
Newmarket.....	.....	2,788.44	2,788.44
O'Brien.....	1,184.13	4,743.44	5,927.57
Owens.....	4,254.36	5,701.86	9,956.22
Pyne.....	.....	2,660.76	2,660.76
Way.....	1,681.65	11,366.71	13,048.36
Williamson.....	3,472.10	3,083.83	6,555.93
Development Roads:			
Playfair Loop Road.....	1,371.63	.....	1,371.63
Dalton Road.....	43,965.85	.....	43,965.85
Eastford Loop.....	.....	9,977.11	9,977.11
Victoria Road.....	25.92	.....	25.92
	\$6,172,462.03	\$1,047,345.42	\$7,219,807.45
Haliburton:			
Highway No. 28.....	\$	\$ 20,864.25	\$ 20,864.25
“ “ 35.....	25,538.52	68,711.87	94,250.39
“ “ 60.....	13,168.87	8,601.82	21,770.69
“ “ 109.....	273,142.16	7,699.24	280,841.40
“ “ 111.....	68,006.51	7,735.76	75,742.27
“ “ 121.....	60,589.45	67,063.04	127,652.49
Secondary Highway No. 500.....	82,727.04	86,736.30	169,463.34
“ “ “ 519.....	7,430.41	60,845.23	68,275.64
“ “ “ 530.....	572.05	31,987.50	32,559.55
Miscellaneous Surveys.....	7,971.05	.....	7,971.05
Development Roads:			
Kushog Lake Road.....	37,544.22	.....	37,544.22
Horseshoe Lake Road.....	39,999.62	.....	39,999.62
Gooderham-Haliburton.....	77,940.52	.....	77,940.52
	\$ 694,630.42	\$ 360,245.01	\$1,054,875.43
Kenora:			
Highway No. 17.....	\$4,249,949.62	\$ 244,728.27	\$4,494,677.89
“ “ 71.....	37,784.16	63,168.51	100,952.67
“ “ 72.....	69,411.93	102,944.36	172,356.29
“ “ 105.....	153,273.32	253,282.88	406,556.20
“ “ 116.....	36,796.84	38,214.93	75,011.77
“ “ 119.....	47,346.94	32,434.52	79,781.46
“ “ 125.....	10,056.75	23,075.01	33,131.76
“ “ 128.....	6,181.03	31,959.71	38,140.74
Secondary Highway No. 594.....	8,693.56	16,319.78	25,013.34
“ “ “ 596.....	11,880.99	30,381.29	42,262.28
“ “ “ 598.....	4,302.06	6,907.69	11,209.75
“ “ “ 599.....	39.65	31,767.19	31,806.84
“ “ “ 601.....	314.47	23,107.64	23,422.11
“ “ “ 603.....	.....	1,283.58	1,283.58
“ “ “ 604.....	19,540.47	24,293.68	43,834.15
“ “ “ 605.....	427.18	17,857.13	18,284.31
“ “ “ 609.....	2,415.70	4,452.72	6,868.42
“ “ “ 618.....	7,625.23	28,171.91	35,797.14
Pellatt to Minaki.....	.....	3,894.34	3,894.34

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Miscellaneous Surveys.....	1,480.46	.....	1,480.46
Connecting Link.....	.....	1,858.14	1,858.14
Unincorporated Townships:			
Aulrey East.....	.....	900.25	900.25
Britton.....	6,010.15	2,061.20	8,071.35
Colenso.....	.....	472.86	472.86
Coyle.....	.....	318.93	318.93
Drayton.....	.....	134.75	134.75
Drayton Reserve.....	.....	673.75	673.75
Eton.....	4,120.63	2,632.34	6,752.97
Ewart.....	1,493.65	59.50	1,553.15
Forgie and Boys.....	.....	2,950.16	2,950.16
Gidley.....	.....	185.80	185.80
Haycock.....	.....	658.77	658.77
Indian Reserve No. 27.....	.....	24.06	24.06
Indian Reserve No. 32A.....	6,745.60	84.00	6,829.60
Indian Reserve No. 39A.....	1,493.64	59.50	1,553.14
Kirkup.....	.....	317.83	317.83
Melgund.....	4,968.31	3,576.44	8,544.75
Mutrie.....	2,106.51	3,364.50	5,471.01
North of Buller.....	.....	58.23	58.23
North of Drayton.....	.....	12.25	12.25
Pellatt.....	.....	5,124.41	5,124.41
Redditt.....	1,388.08	3,027.97	4,416.05
Redvers.....	2,085.08	1,542.33	3,627.41
Rowell.....	.....	382.70	382.70
Rugby.....	5,970.60	3,651.31	9,621.91
Smellie.....	.....	21.88	21.88
South of Pellatt.....	.....	1,710.83	1,710.83
South Worth.....	3,980.15	1,857.53	5,837.68
Van Horne.....	.....	2,516.92	2,516.92
Vermilion Additional.....	.....	1,595.24	1,595.24
Wabigoon.....	2,085.08	1,542.33	3,627.41
Wainwright.....	10,309.29	1,490.06	11,799.35
West of Redditt.....	.....	1,822.97	1,822.97
Zealand.....	6,553.57	7,580.06	14,133.63
	\$4,726,830.70	\$1,032,514.94	\$5,759,345.64
Muskoka:			
Highway No. 11.....	\$ 237,582.02	\$ 93,109.70	\$ 330,691.72
“ “ 35.....	26,526.38	11,043.10	37,569.48
“ “ 60.....	13,907.14	21,849.14	35,756.28
“ “ 69.....	6,091.61	50,469.96	56,561.57
“ “ 103.....	3,279.57	40,660.39	43,939.96
“ “ 118.....	324,265.96	72,112.12	396,378.08
“ “ 400.....	8,160.42	.....	8,160.42
Secondary Highway No. 501.....	282.19	30,702.01	30,984.20
“ “ “ 514.....	27,452.76	23,735.01	51,187.77
“ “ “ 516.....	1,171.53	21,073.25	22,244.78
“ “ “ 525.....	.....	1,483.31	1,483.31
“ “ “ 527.....	3,800.70	18,588.45	22,389.15
“ “ “ 532.....	152,347.42	48,610.50	200,957.92
“ “ “ 612.....	64.86	4,338.56	4,403.42
Miscellaneous Surveys.....	532.51	.....	532.51
Connecting Links.....	282,514.07	13,072.33	295,586.40
Unincorporated Townships:			
Baxter.....	.....	11,158.01	11,158.01
Gibson North.....	.....	484.92	484.92
Gibson South.....	.....	1,715.36	1,715.36
Sinclair.....	.....	3,734.86	3,734.86
Development Roads:			
Rosseau-Huntsville.....	44,813.20	.....	44,813.20
Brackenrig Road.....	34,942.24	.....	34,942.24
Port Cunningham Road.....	23,823.43	.....	23,823.43

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Muskoka (Cont'd):			
Huntsville-Rosseau (Part).....	\$ 14,094.92	\$..	\$ 14,094.92
Huntsville-Rosseau (Part).....	9,978.29	.....	9,978.29
	\$1,215,631.22	\$ 467,940.98	\$1,683,572.20
Nipissing:			
Highway No. 11	\$ 165,783.17	\$ 198,296.69	\$ 364,079.86
.. .. 17	967,799.53	197,532.65	1,165,332.18
.. .. 60	464,102.77	100,130.63	564,233.40
.. .. 63	23,887.81	64,465.31	88,353.12
.. .. 64	58,648.27	128,830.85	187,479.12
.. .. 94	1,824.12	13,946.44	15,770.56
.. .. 123	10,709.15	10,709.15	10,709.15
.. .. 127	208,706.44	32,484.89	241,191.33
Secondary Highway No. 514.....	661.30	.....	661.30
.. .. 523 .....	.....	23,308.81	23,308.81
.. .. 528 .....	.....	2,282.47	2,282.47
.. .. 531 .....	.....	7,927.56	7,927.56
.. .. 533	12,471.77	33,125.16	45,596.93
.. .. 539	34,435.43	39,606.26	74,041.69
.. .. 539A .....	.....	1,238.18	1,238.18
Sidewalks:			
Township of Ferris.....	1,428.28	.....	1,428.28
Connecting Links.....	2,212.16	7,191.59	9,403.75
Unincorporated Townships:			
Airy.....	850.00	2,208.25	3,058.25
Dickens.....	.....	1,179.10	1,179.10
Lyell.....	.....	89.37	89.37
Murchison.....	4,408.46	4,425.43	8,833.89
Sabine.....	2,081.05	797.80	2,878.85
Badgerow.....	6,009.42	3,486.19	9,495.61
Bastedo.....	.....	1,169.80	1,169.80
Boulter.....	.....	136.00	136.00
Clement.....	.....	253.62	253.62
Crerar.....	.....	2,846.00	2,846.00
Dana.....	2,618.66	253.62	2,872.28
Falconer.....	5,060.75	3,574.57	8,635.32
Gibbons.....	6,841.55	3,413.18	10,254.73
Gladman.....	.....	21.00	21.00
Grant.....	2,206.03	3,690.26	5,896.29
Hugel.....	5,402.79	5,200.85	10,603.64
Kirkpatrick.....	5,494.84	5,889.33	11,384.17
Lauder.....	5,414.62	1,187.11	6,601.73
Loudon.....	.....	453.52	453.52
MacPherson.....	5,251.03	7,936.64	13,187.67
Pardo.....	.....	253.62	253.62
Pentland.....	1,353.65	296.78	1,650.43
Phelps.....	12,818.26	4,622.33	17,440.59
Poitras.....	.....	903.10	903.10
Wyse.....	.....	225.77	225.77
Strathy.....	65.00	28.60	93.60
Development Roads:			
Booth Track Road.....	533.76	.....	533.76
Chisholm-East Ferris Boundary.....	.....	14,987.60	14,987.60
Birch's Road.....	1,558.43	.....	1,558.43
Kiosk Road.....	19,607.04	.....	19,607.04
O'Brien Street.....	5,638.56	.....	5,638.56
	\$2,035,174.95	\$ 930,606.08	\$2,965,781.03
Parry Sound:			
Highway No. 11	\$2,869,631.70	\$ 195,196.75	\$3,064,828.45
.. .. 69	3,827,426.62	180,862.18	4,008,288.80
.. .. 94	2,742.92	1,223.38	3,966.30
.. .. 124	495,901.86	114,658.00	610,559.86

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Secondary Highway No. 510.....	\$ 83.52	\$ 5,775.20	\$ 5,858.72
" " " 518.....	53,085.37	90,672.08	143,757.45
" " " 520.....		96,255.94	96,255.94
" " " 522.....	92,554.70	70,986.67	163,541.37
" " " 524.....	31.28	4,257.13	4,288.41
" " " 526.....		16,818.28	16,818.28
" " " 529.....	135.41	17,488.98	17,624.39
" " " 532.....	175,342.77	23,414.87	198,757.64
" " " 534.....	82,611.62	55,788.78	138,400.40
" " " 559.....	34,773.78	49,270.04	84,043.82
" " " 592.....	83.77	7,705.22	7,788.99
" " " 612.....	102.57	4,255.08	4,357.65
Miscellaneous Surveys.....	5,916.51		5,916.51
Sidewalks:			
Hamlet of Dunchurch.....	144.69		144.69
Connecting Link.....	174,500.81	2,105.42	176,606.23
Unincorporated Townships:			
Bethune.....	5,185.82	7,298.44	12,484.26
Blair.....		2,270.38	2,270.38
Burpee.....	2,155.67	1,041.65	3,197.32
Conger.....	2,466.14	4,426.24	6,892.38
Croft.....	5,952.28	5,327.75	11,280.03
Ferguson.....	3,849.54	792.91	4,642.45
Gurd.....	2,947.72	9,790.00	12,737.72
Hardy.....	4,467.33	3,450.44	7,917.77
Harrison.....	1,934.70	897.57	2,832.27
Henvey.....		999.25	999.25
Laurier.....	5,203.00	5,048.79	10,251.79
Lount.....	7,662.96	6,435.11	14,098.07
McConkey.....	2,496.86	1,466.29	3,963.15
McKenzie.....	2,155.68	1,041.65	3,197.33
Mills.....	5,401.21	3,450.45	8,851.66
Monteith.....	992.49	5,394.44	6,386.93
Mowat.....		1,513.58	1,513.58
Patterson.....	4,991.23	2,679.97	7,671.20
Pringle.....	2,293.73	6,206.19	8,499.92
Proudfoot.....	22,628.20	8,978.00	31,606.20
Shawanga.....		299.95	299.95
Spence.....	2,971.03	4,685.42	7,656.45
Wallbridge.....		5,016.18	5,016.18
Wilson.....	2,496.86	977.53	3,474.39
Dokis Indian Reserve.....		1,181.17	1,181.17
Development Roads:			
Dillon Cove Road.....	5,813.05		5,813.05
Fifth Line Road, Nipissing Township..	16,758.27		16,758.27
Booth Track Road.....	2,135.07		2,135.07
Rose Point Road.....	34,529.03		34,529.03
Doe Lake Road.....	14,237.88		14,237.88
Sideroad 2/3, Concessions 2 and 3, McMurrich Township.....	18,378.64		18,378.64
Middle River Road.....		14,756.31	14,756.31
Concessions 2 and 3, Joly Township....	8,568.95		8,568.95
Humphrey Boundary northerly.....	20,089.31		20,089.31
	\$8,023,832.55	\$1,042,159.66	\$9,065,992.21
Rainy River:			
Highway No. 11.....	\$2,224,880.85	\$ 102,976.79	\$2,327,857.64
" " 71.....		35,562.11	35,562.11
Secondary Highway No. 600.....	27,242.57	53,564.43	80,807.00
" " " 602.....	3,835.27	28,361.23	32,196.50
" " " 611.....	1,448.33	8,129.92	9,578.25
" " " 613.....	2,087.25	46,500.95	48,588.20
" " " 615.....	3,217.75	19,205.72	22,423.47
" " " 617.....	6,371.83	25,627.52	31,999.35
" " " 619.....	8,390.40	27,540.34	35,930.74

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Rainy River (Cont'd):			
Secondary Highway No. 621.....	\$ 76,973.74	\$ 52,032.58	\$ 129,006.32
" " " 622.....	1,019.62	8,648.11	9,667.73
" " " 633.....	174,020.71	4,814.76	178,835.47
Miscellaneous Surveys.....	3,366.64		3,366.64
Connecting Links.....		415.59	415.59
Unincorporated Townships:			
Dance.....		1,483.06	1,483.06
Dewart.....	1,192.56	2,126.50	3,319.06
Indian Reserve No. 17A.....		932.52	932.52
Indian Reserve No. 18B.....		98.56	98.56
Miscampbell.....		2,114.83	2,114.83
Nelles.....		2,532.88	2,532.88
North of Fleming.....		21.00	21.00
Sifton.....		3,587.97	3,587.97
Spohn.....		2,344.97	2,344.97
Sutherland.....		1,746.13	1,746.13
Development Roads:			
Steep Rock Road.....	9,116.59		9,116.59
Shenson-Dobie.....	50,260.92		50,260.92
	\$2,593,425.03	\$ 430,368.47	\$3,023,793.50
Sudbury:			
Highway No. 17.....	\$ 393,334.48	\$ 218,404.00	\$ 611,738.48
" " " 64.....	214,161.26	67,594.93	281,756.19
" " " 68.....	823,119.61	66,417.53	889,537.14
" " " 69.....	273,249.17	166,081.77	439,330.94
" " " 101.....	109,592.69	89,329.99	198,922.68
" " " 129.....	123,016.14	91,033.67	214,049.81
Secondary Highway No. 528.....		15,744.81	15,744.81
" " " 528A.....		7,653.71	7,653.71
" " " 535.....	95,852.09	63,520.99	159,373.08
" " " 536.....		7,979.87	7,979.87
" " " 537.....	21,556.34	34,121.92	55,678.26
" " " 539.....	537.21	7,120.57	7,657.78
" " " 541.....	10,960.17	39,206.58	50,166.75
" " " 543.....	965.44	10,406.41	11,371.85
" " " 544.....	97,036.97	117,277.38	214,314.35
" " " 545.....	6,724.30	38,240.32	44,964.62
" " " 547.....	62.05	2,092.93	2,154.98
" " " 549.....	8,899.10	26,566.40	35,465.50
" " " 553.....		6,435.36	6,435.36
" " " 560.....	46,457.84	67,118.12	113,575.96
" " " 606.....	1,253.73	2,357.14	3,610.87
" " " 607.....	9,331.92	18,228.18	27,560.10
" " " 607A.....		1,135.00	1,135.00
" " " 616.....		4,064.32	4,064.32
Burwash-Killarney.....	431,526.17		431,526.17
Miscellaneous Surveys.....	9,959.69		9,959.69
Sidewalks:			
Village of St. Charles.....	2,069.59		2,069.59
Village of Noelville.....	Cr. 21.50		Cr. 21.50
Connecting Links.....		3,081.46	3,081.46
Unincorporated Townships:			
Afton.....		203.83	203.83
Allen.....		141.50	141.50
Bigwood.....	6,988.99	4,754.25	11,743.24
Cherriman.....		89.51	89.51
Davis.....		216.69	216.69
Delamere.....		4,244.88	4,244.88
Hoskin.....		1,105.47	1,105.47
Haddo.....		453.51	453.51
Henry.....		673.10	673.10
Janes.....	6,258.17	216.70	6,474.87
McNish.....		253.62	253.62
Scollard.....		1,816.40	1,816.40

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Noble	2,220.74	.....	2,220.74
Togo	2,220.74	.....	2,220.74
Awrey .....	.....	191.38	191.38
Broder	14,748.83	10,460.35	25,209.18
Burwash	124.78	5,141.08	5,265.86
Cartier .....	.....	201.80	201.80
Cleland	2,443.64	3,131.38	5,575.02
Curtin .....	.....	7.00	7.00
Dill	3,047.09	2,961.33	6,008.42
Dryden	3,773.13	1,196.32	4,969.45
Eden .....	.....	495.88	495.88
Fairbank .....	.....	4,075.49	4,075.49
Foleyet .....	.....	45.12	45.12
Foster	1,206.00	606.30	1,812.30
Hawley .....	.....	282.31	282.31
Hendrie .....	.....	203.32	203.32
Lorne .....	.....	5,878.80	5,878.80
Loughrin	4,048.28	2,914.67	6,962.95
Louise .....	.....	4,087.79	4,087.79
Lumsden .....	.....	1,256.52	1,256.52
MacLennan .....	.....	2,794.69	2,794.69
Merritt	6,993.10	2,878.15	9,871.25
Mongowin .....	.....	662.44	662.44
Norman	578.58	.....	578.58
Rathbun .....	.....	585.76	585.76
Scadding .....	.....	1,619.68	1,619.68
Secord	289.21	846.65	1,135.86
Snider .....	.....	166.55	166.55
Street .....	.....	1,447.36	1,447.36
Tilton .....	.....	554.24	554.24
Trill .....	.....	297.77	297.77
Truman .....	.....	215.15	215.15
Wisner .....	.....	193.59	193.59
McKinnon	3,043.84	794.84	3,838.68
Shakespeare	2,780.79	682.59	3,463.38
Development Roads:			
Long Lake Road .....	.....	9,969.15	9,969.15
Spanish River Bridge	134,756.68	.....	134,756.68
Webbwood Bridge and Approaches	3,730.02	.....	3,730.02
North 1/2, Lot 7, Concession 3, Hallam Township	30,811.81	.....	30,811.81
Vermillion River Bridge westerly	2,290.81	.....	2,290.81
	\$2,911,999.69	\$1,252,228.27	\$4,164,227.96
Temiskaming:			
Highway No. 11	\$ 760,790.71	\$ 123,314.94	\$ 884,105.65
" " 65	548,197.88	162,891.21	711,089.09
" " 66	745,673.84	48,912.09	794,585.93
" " 101	22,977.01	32,673.24	55,650.25
" " 112 .....	.....	24,800.10	24,800.10
Secondary Highway No. 558	20,563.78	30,628.87	51,192.65
" " " 560	93,561.86	132,087.61	225,649.47
" " " 562	23,906.43	44,434.63	68,341.06
" " " 564 .....	.....	16,759.67	16,759.67
" " " 566	7,369.68	41,333.18	48,702.86
" " " 567	22,545.88	37,459.21	60,005.09
" " " 568 .....	.....	11,981.73	11,981.73
" " " 569	14,558.59	52,550.18	67,108.97
" " " 570 .....	.....	34,747.07	34,747.07
" " " 571	8,595.02	13,970.71	22,565.73
" " " 573	1,903.68	20,800.95	22,704.63
" " " 624	21,000.00	19,398.08	40,398.08
" " " 629 .....	.....	4,813.50	4,813.50
Miscellaneous Surveys	394.42	.....	394.42

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming (Cont'd):			
Sidewalks:			
Village of Earleton.....	\$ 600.00	\$	\$ 600.00
Connecting Links.....	229,371.44	11,810.53	241,181.97
Unincorporated Townships:			
Argyle.....	.....	70.31	70.31
Auld.....	.....	107.00	107.00
Barber.....	.....	617.60	617.60
Bayly.....	.....	1,248.54	1,248.54
Beauchamp.....	653.80	8,390.94	9,044.74
Benoit.....	446.34	1,614.12	2,060.46
Blair.....	1,000.00	2,318.73	3,318.73
Boston.....	325.50	.....	325.50
Bryce.....	1,398.33	1,063.75	2,462.08
Cane.....	.....	5,115.99	5,115.99
Catharine.....	.....	1,758.28	1,758.28
Corkhill.....	.....	105.41	105.41
Eby.....	1,000.00	2,608.14	3,608.14
Firstbrook.....	.....	1,879.78	1,879.78
Gillies.....	.....	100.00	100.00
Grentfell.....	.....	1,726.73	1,726.73
Henwood.....	5,796.89	8,460.60	14,257.49
Hincks.....	.....	57.81	57.81
Ingram.....	3,814.97	9,269.82	13,084.79
Keefer.....	.....	3,261.55	3,261.55
Lawson.....	.....	105.41	105.41
Lebel.....	.....	4,834.93	4,834.93
Lorrain.....	.....	476.40	476.40
Maisonville.....	446.34	1,614.12	2,060.46
Marquis.....	5,491.35	4,917.98	10,409.33
Marter.....	7,403.43	3,972.07	11,375.50
McFadden.....	.....	280.00	280.00
Nicol.....	.....	118.75	118.75
Ossian.....	.....	1,057.39	1,057.39
Otto.....	5,495.00	13,522.44	19,017.44
Pacaud.....	.....	5,788.59	5,788.59
Pense.....	1,488.07	3,037.71	4,525.78
Robillard.....	7,000.00	6,908.56	13,908.56
Savard.....	4,677.76	4,956.22	9,633.98
Sharpe.....	3,500.00	3,385.28	6,885.28
Tudhope.....	.....	607.61	607.61
Development Roads:			
Sixth Sideroad, Brethour Township.....	7,854.46	.....	7,854.46
Concessions 5 and 6 Road, Harley Twp.	11,991.88	.....	11,991.88
Earlton westerly.....	15,500.00	.....	15,500.00
Bass Lake Road.....	.....	13,988.52	13,988.52
3rd. Street in Elk Lake.....	2,957.94	.....	2,957.94
	\$2,610,252.48	\$ 984,714.58	\$3,594,967.06
Thunder Bay:			
Highway No. 11.....	\$1,789,524.12	\$ 341,376.40	\$2,130,900.52
“ “ 11A.....	3,783.46	49,545.27	53,328.73
“ “ 17.....	5,403,690.41	204,806.47	5,608,496.88
“ “ 61.....	29,604.07	44,885.58	74,489.65
“ “ 130.....	68,837.05	35,735.82	104,572.87
Secondary Highway No. 580.....	95.55	7,124.29	7,219.84
“ “ “ 582.....	38,949.69	2,038.95	40,988.64
“ “ “ 584.....	26,199.34	62,230.75	88,430.09
“ “ “ 585.....	312.01	47,151.31	47,463.32
“ “ “ 586.....	33.45	1,928.99	1,962.44
“ “ “ 587.....	24,324.06	39,004.91	63,328.97
“ “ “ 588.....	49,017.82	58,495.11	107,512.93
“ “ “ 589.....	17,697.78	33,271.52	50,969.30
“ “ “ 590.....	11,894.91	76,821.51	88,716.42
“ “ “ 591.....	680.92	10,361.51	11,042.43
“ “ “ 593.....	8,959.28	9,882.65	18,841.93

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Secondary Highway No. 595	\$ 4,082.99	\$ 45,669.74	\$ 49,752.73
" " " 597	349.38	7,970.61	8,319.99
" " " 599	39,940.16	45,285.14	85,225.30
" " " 608	10,051.36	39,808.93	49,860.29
" " " 614	124,276.41	59,743.54	184,019.95
" " " 625	2,334.29	11,396.51	13,730.80
" " " 627	75.02	2,433.97	2,508.99
Geraldton Cut-off		189.81	189.81
Miscellaneous Surveys	1,153.60		1,153.60
Connecting Links	2,675.85	6,842.83	9,518.68
Unincorporated Townships:			
Armstrong		4,322.49	4,322.49
Conacher		4.37	4.37
Dawson Road Lots		9,358.38	9,358.38
Devon	3,718.50	2,473.95	6,192.45
Forbes	2,494.10	5,059.53	7,553.63
Fowler	5,691.63	4,323.47	10,015.10
Goldie	987.25	980.89	1,968.14
Gorham	12,174.96	9,965.04	22,140.00
Hardwick		816.47	816.47
Indian Reserve No. 83		28.00	28.00
Jacques		7,132.04	7,132.04
Jackfish	4,753.56		4,753.56
Joynt and Inwood		302.55	302.55
Kilkenny		3,860.89	3,860.89
Leduc		31.50	31.50
Lybster	2,415.08	3,221.21	5,636.29
Lyons		2,335.78	2,335.78
Marks		5,807.15	5,807.15
McTavish West		195.28	195.28
North of Hagoy		25.00	25.00
North Shore-Lake Shebandowan		5.25	5.25
North West of Ames		92.75	92.75
Pearson	1,876.80	8,315.50	10,192.30
Rosspart		475.02	475.02
Scoble		7,576.62	7,576.62
Sibley	3,167.20	3,518.81	6,686.01
South and East of Ames		2,622.00	2,622.00
Stirling	1,379.79	1,954.74	3,334.53
Strange		3,315.52	3,315.52
Upsala		5,892.89	5,892.89
Ware	4,885.74	8,867.23	13,752.97
Development Roads:			
Hilldale Road	43,907.38		43,907.38
River Road	18,147.17		18,147.17
	\$7,764,142.14	\$1,346,882.44	\$9,111,024.58
COUNTY AND DISTRICT TOTALS	\$131,705,041.04	\$27,727,300.61	\$159,432,341.65
Sundry Unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.	\$ 2,206,927.35	\$ 7,272,744.03	\$ 9,479,671.38
TOTAL EXPENDITURES	\$133,911,968.39	\$35,000,044.64	\$168,912,013.03

APPENDIX No. 2
DEPARTMENT EXPENDITURES BY HIGHWAYS
 April 1st, 1960 to March 31st, 1961

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
King's Highways					
2	Quebec Border-Windsor.....	441.5	\$1,596,187.10	\$1,420,333.69	\$3,016,520.79
3	Fort Erie-Windsor.....	243.5	1,281,669.48	544,076.10	1,825,745.58
3A	Hwy. 3 (Chambers Corners)- Welland.....	9.5	2,958.05	26,820.38	29,778.43
3B	Hwy. 3-Windsor.....	4.0	573,739.48	6,308.45	580,047.93
3C	Hwy. 3 (Fort Erie)-Ridgeway.....	6.8	2,252.99	21,627.32	23,880.31
4	Port Stanley-Hwy. 10 (Flesherton).....	134.6	679,117.89	304,480.13	983,598.02
5	Hwy. 27 (Toronto)-Hwy. 2 (Paris).....	54.5	487,038.90	228,427.93	715,466.83
6	Port Dover-Tobermory.....	203.4	1,899,612.95	549,081.35	2,448,694.30
7	Hwy. 15 (Perth)-Hwy. 402 (Sarnia).....	398.6	2,903,614.38	979,804.10	3,883,418.48
7A	Peterborough-Hwys. 7 and 12 (Manchester).....	40.1	1,121,817.00	61,536.88	1,183,353.88
8	Niagara Falls-Goderich.....	98.0	743,709.05	272,733.79	1,016,442.84
8A	Queenston Bridge-Hwy. 8 (St. Davids).....	2.7	4,011.92	6,943.78	10,955.70
9	Hwy. 27 (Schomberg)-Hwy. 21 (Kincardine).....	97.0	181,679.70	233,752.62	415,432.32
10	Port Credit-Owen Sound.....	88.4	673,281.02	263,977.54	937,258.56
11	Toronto-Secondary Hwy. 623 (Rainy River).....	1,104.3	14,895,560.74	1,727,777.00	16,623,337.74
11A	Port Arthur-Hwys. 11 and 17 (Sistonen's Corners).....	20.8	3,783.46	49,545.27	53,328.73
12	Whitby-Hwy. 27 (Midland).....	72.4	337,227.96	207,051.41	544,279.37
14	Hwy. 33 (Bloomfield)-Hwy. 7 (Marmora).....	43.2	751,728.18	77,513.02	829,241.20
15	Hwy. 2 (Barriefield)-Hwy. 15 (Stittsville).....	124.5	1,621,764.22	242,932.38	1,864,696.60
16	Hwy. 2 (Johnstown)-Ottawa.....	54.6	411,493.78	109,302.69	520,796.47
17	Quebec Border-Manitoba Border.....	1,279.2	19,852,888.00	1,879,242.79	21,732,130.79
18	Leamington-Windsor.....	42.3	90,738.63	51,482.60	142,221.23
18A	Hwy. 18 (Kingsville)-Hwy. 18.....	19.3	4,268.23	15,518.40	19,786.63
19	Port Burwell-Hwy. 86 (Tralee).....	70.9	1,143,808.69	127,550.92	1,271,359.61
20	Niagara Falls-Hwy. 2 (Burlington).....	51.0	210,429.12	155,110.70	365,539.82
21	Hwy. 3 (Morpeth)-Owen Sound.....	184.9	1,087,899.73	320,979.84	1,408,879.57
22	Hwy. 4 (Masonville)-Hwy. 7.....	28.8	31,002.18	229,156.08	260,158.26
23	Hwy. 7-Hwy. 9 (Tiviotdale).....	56.6	93,796.97	131,069.07	224,866.04
24	Port Dover-Collingwood.....	112.1	338,014.86	230,824.98	568,839.84
24A	Paris-Galt.....	10.8	115.56	26,131.15	26,246.71
25	Hwy. 2 (Campbells Corners)- Hwy. 7.....	22.2	12,581.43	103,423.80	116,005.23
26	Barrie-Owen Sound.....	61.1	26,442.86	170,511.88	196,954.74
27	Queen Elizabeth Way- Penetang.....	83.1	351,727.60	339,159.60	690,887.20
28	Port Hope-Hwy. 62 (Bancroft).....	80.6	24,859.54	183,065.60	207,925.14
29	Brookville-Hwy. 17 (Arnprior).....	69.7	345,864.16	152,717.56	498,581.72
30	Hwy. 2 (Brighton)-Hwy. 7 (Havelock).....	29.5	3,047.67	60,345.18	63,392.85
31	Hwy. 2 (Morrisburg)-Ottawa.....	40.9	65,413.94	101,462.79	166,876.73
32	Hwy. 2-Hwy. 15.....	12.3	113,905.42	24,033.02	137,938.44
33	Kingston-Hwy. 14.....	83.2	613,156.18	147,925.54	761,081.72
34	Hwy. 2 (Lancaster)-Hwy. 17 (Hawkesbury).....	37.1	749.47	221,187.97	221,937.44
35	Hwy. 401-Hwy. 11B (Huntsville).....	140.1	68,301.04	198,947.70	267,248.74

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
35A	Hwy. 121-Hwy. 35	2.0	.....	3,018.06	3,018.06
36	Hwy. 7-Hwy. 28 (Burleigh Falls)	46.5	42,656.49	78,370.94	121,027.43
37	Hwy. 401 (Belleville)-Hwy. 7 (Actinolite)	28.9	438,162.44	57,230.97	495,393.41
38	Hwy. 401-Hwy. 7	44.7	538,587.49	93,949.33	632,536.82
39	Hwy. 2-Windsor	14.9	336,199.17	19,284.05	356,083.22
40	Chatham-Sarnia	44.2	927,717.77	74,345.96	1,002,063.73
41	Hwy. 33-Pembroke	142.3	761,824.75	208,431.56	970,256.31
42	Hwy. 29 (Forthton)-Westport	33.1	4,253.34	59,482.18	63,735.52
43	Hwy. 34 (Alexandria)-Hwy. 31	77.5	3,797.46	76,107.44	79,904.90
44	Hwy. 17 (Carp)-Hwy. 29	11.5	661.71	17,797.76	18,459.47
45	Hwy. 401 (Cobourg)-Hwy. 7	31.5	662,392.41	76,964.32	739,356.73
46	Hwy. 7-Hwy. 35 (Cobokonk)	34.0	2,307.51	55,004.72	57,312.23
47	Hwy. 48 (Ringwood)-Hwys. 7 and 12	21.3	223,205.40	108,658.91	331,864.31
48	Hwy. 401 (Toronto)-Hwy. 12	51.7	481,785.30	233,275.22	715,060.52
49	Kleinburg-Hwy. 50	3.2	20,607.00	26,750.42	47,357.42
50	Hwy. 7-Hwy. 9	18.7	87,708.33	83,958.58	171,666.91
52	Hwy. 2 (Alberton)-Wentworth/ Wellington County Line	15.4	4,442.02	37,401.27	41,843.29
53	Hwy. 20-Hwy. 2 (Eastwood)	27.4	62,887.67	76,954.27	139,841.94
54	Hwy. 3 (Cayuga)-Hwy. 2 (Cainsville)	29.0	487,458.98	83,445.79	570,904.77
55	Hamilton-Hwy. 53	2.1	21,146.64	905.47	22,052.11
56	Hwy. 3-Hwy. 53	14.8	32,924.98	35,548.24	68,473.22
57	Hwy. 3A-Hwy. 20 (Bismark)	8.8	11,085.80	24,966.28	36,052.08
58	Hwy. 3-Thorold	13.5	49,009.28	62,054.29	111,063.57
59	Hwy. 3 (Delhi)-Woodstock	25.8	1,782.57	46,237.09	48,019.66
60	Hwy. 17-Hwy. 35 (Dwight)	117.1	937,272.18	192,071.73	1,129,343.91
61	Pigeon River-Fort William	38.4	29,604.07	44,885.58	74,489.65
62	Hwy. 7 (Madoc)-Quebec Border	118.3	882,645.01	202,286.85	1,084,931.86
63	North Bay-Temiskaming	38.7	23,887.81	64,465.31	88,353.12
64	Hwy. 69-Hwy. 11 (Marten River)	86.9	272,809.53	196,425.78	469,235.31
65	Quebec Border-Matachewan	81.5	548,197.88	162,891.21	711,089.09
66	Quebec Border-Hwy. 65	62.7	745,673.84	48,912.09	794,585.93
67	Secondary Hwy. 578-Hwy. 101	21.9	17,864.45	41,193.98	59,058.43
68	South Baymouth-Hwy. 17	91.9	852,882.97	239,225.60	1,092,108.57
69	Hwy. 12-Secondary Hwy. 545	212.4	4,106,817.40	436,269.74	4,543,087.14
71	Fort Francis-Hwy. 17 (Longbow Corners)	29.7	37,784.16	98,730.62	136,514.78
72	Hwy. 17 (Dinorwic)- Sioux Lookout	43.5	69,411.93	102,944.36	172,356.29
73	Port Bruce-Dorchester	22.9	12,595.55	32,296.73	44,892.28
74	Hwy. 3 (New Sarum)- Nilestown	13.8	5,290.68	36,616.60	41,907.28
76	Hwy. 3 (Eagle)-Hwy. 2	11.5	37,156.64	18,972.14	56,128.78
78	Hwy. 21 (Dresden)- Wallaceburg	10.4	4,377.11	8,959.41	13,336.52
79	Hwy. 2-Hwy. 7	29.5	4,728.93	38,521.88	43,250.81
80	Hwy. 2 (Strathburn)-Hwy. 79	17.5	409,967.05	24,248.95	434,216.00
81	Hwy. 2 (Delaware)-Hwy. 21 (Grand Bend)	39.9	97,047.47	119,231.71	216,279.18
82	Hwy. 7-Hwy. 21	5.5	1,579.75	7,166.69	8,746.44
83	Hwy. 23 (Russeldale)-Hwy. 21 (Brewster)	24.1	4,727.17	30,848.27	35,575.44
84	Hwy. 4 (Hensall)-Hwy. 21 (St. Joseph)	10.7	3,049.96	12,697.27	15,747.23
85	Waterloo-Hwy. 86 (Elmira)	7.3	1,371.46	14,933.33	16,304.79
86	Hwy. 7-Hwy. 21 (Amberley)	78.9	117,412.12	190,965.91	308,378.03
87	Hwy. 9-Hwy. 86 (Bluevale)	19.6	90,946.54	35,769.56	126,716.10
88	Hwy. 11-Hwy. 27 (Bondhead)	5.7	775.00	29,553.11	30,328.11
89	Hwy. 27 (Cookstown)-Hwy. 10 (Primrose)	22.0	97,010.99	57,376.30	154,387.29

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
90	Barrie-Vespra, Innisfil Town- ship Line.....	11.1	14,630.77	36,480.94	51,111.71
91	Hwy. 26-Hwy. 24 (Duntroon).....	5.1	1,103.28	32,965.70	34,068.98
92	Hwy. 27-Wasaga Beach.....	8.8	356,510.45	22,104.62	378,615.07
93	Hwy. 11-Hwy. 27 (Waverly).....	17.6	401,261.08	40,273.05	441,534.13
94	Hwy. 11B (Callender)- Hwy. 17.....	5.9	4,567.04	15,169.82	19,736.86
95	Hornes Point-Hwy. 96 (Wolfe Island).....	7.1	.....	13,180.53	13,180.53
96	Quebec Head-End of Wolfe Island.....	20.4	12,002.10	36,144.14	48,146.24
97	Hwy. 6 (Freelton)-Hwy. 19.....	39.6	639,484.44	80,567.41	720,051.85
98	Hwy. 3 (Blenheim)-Hwy. 2 (Windsor).....	55.4	21,356.75	50,547.87	71,904.62
99	Dundas-Hwy. 24.....	15.9	7,859.42	45,711.29	53,570.71
100	Hwy. 2 (Thamesford)-Hwy. 7.....	15.3	374,701.20	43,099.89	417,801.09
101	Quebec Border-Hwy. 17 (Wawa).....	159.2	437,167.72	259,844.18	697,011.90
102	Hwy. 2 (Hamilton)-Hwy. 8 (Dundas).....	2.2	12,251.88	8,472.73	20,724.61
103	Hwy. 12 (Waubashene)- Hwy. 69 (Footes Bay).....	28.8	3,710.67	47,391.35	51,102.02
104	Hwy. 9-Grant Valley.....	1.8	2,326.59	3,900.34	6,226.93
105	Hwy. 17 (Vermillion Bay)- Red Lake.....	101.7	153,273.32	253,282.88	406,556.20
106	Hwy. 28 (Dale)-Hwy. 2 (Welcome).....	2.6	.....	7,728.39	7,728.39
107	Hwy. 18-Hwy. 3 (Ruthven).....	1.0	3,528.41	1,053.70	4,582.11
108	Hwy. 17-Quirke Lake.....	26.0	226,793.46	57,603.89	284,397.35
109	Hwy. 28-Secondary Hwy. 500.....	8.2	275,242.62	21,005.38	296,248.00
111	Dyno Mine-Secondary Hwy. 500.....	6.8	68,006.51	7,735.76	75,742.27
112	Hwy. 11-Hwy. 66.....	12.6	.....	24,800.10	24,800.10
114	Hwy. 3 (Maidstone)-Hwy. 98.....	1.2	29.54	995.38	1,024.92
115	Hwy. 401-Peterborough.....	14.7	30,531.14	39,549.62	70,080.76
116	Hwy. 72 (Patricia Corners)- Hudson.....	10.4	36,796.84	38,214.93	75,011.77
118	Hwy. 35-Hwy. 69 (Glen Orchard).....	47.4	324,265.96	72,112.12	396,378.08
119	Hwy. 17 (Dryden)-Richan.....	13.9	47,346.94	32,434.52	79,781.46
121	Tory Hill-Hwy. 35.....	63.8	94,061.74	97,350.86	191,412.60
122	Hwy. 2-Queen Elizabeth Way.....	3.8	12,366.64	26,380.77	38,747.41
123	Hwy. 11-North Bay Airport.....	5.2	.....	10,709.15	10,709.15
124	Hwy. 69-Hwy. 11 (Sundridge).....	52.9	495,901.86	114,658.00	610,559.86
125	Hwy. 105-Cochenour Mine.....	8.7	10,056.75	23,075.01	33,131.76
126	Hwy. 401-London.....	3.9	103,786.92	.....	103,786.92
127	Hwy. 62 (Maynooth)-Hwy. 60.....	26.8	208,942.92	46,003.52	254,946.44
128	Kenora-Redditt.....	18.6	6,181.03	31,959.71	38,140.74
129	Hwy. 17-Chapleau.....	148.9	189,121.00	309,213.95	498,334.95
130	Port Arthur-Hwy. 61.....	17.8	68,837.05	35,735.82	104,572.87
132	Hwy. 41-Renfrew.....	17.8	468,175.95	18,996.37	487,172.32
135	Hwy. 401-Hwy. 2.....	3.8	9,784.43	6,130.33	15,914.76
136	Hwy. 24-Orangeville.....	8.3	22,366.56	21,025.94	43,392.50
400	Hwy. 401-Hwy. 12.....	74.5	1,318,933.15	396,082.33	1,715,015.48
401	Hwy. 34 (Lancaster)-Hwy. 3B (Windsor).....	392.1	26,254,781.42	1,905,031.27	28,159,812.69
402	Hwy. 7-Bluewater Bridge.....	4.0	34,883.92	9,983.48	44,867.40
403	Hwy. 27 (Toronto)-Hwy. 401 (Woodstock).....	90.5	546,512.95	.....	546,512.95
404	Extension of Don Valley Parkway.....	25.0	600,820.39	.....	600,820.39
405	QEW-Queenston, Lewiston International Bridge.....	4.0	432,523.53	.....	432,523.53
QEW	Port Erie-Toronto.....	92.9	6,268,070.67	1,071,171.50	7,339,242.17
Total Expenditure Allocated to King's Highways.			\$109,868,208.70	\$21,748,355.37	\$131,616,564.07

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
Secondary Highways					
500	Hermion-Hwy. 36 (Bobcaygeon).....	87.7	\$ 248,398.12	\$ 155,058.75	\$ 403,456.87
501	Hwy. 103 Honey Harbour.....	9.2	282.19	30,702.01	30,984.20
502	Hwy. 2 (Napanee)-Hwy. 2 (Marysville).....	9.2	10,979.88	14,778.49	25,758.37
503	Hwy. 46 (Kirkfield)-Hwy. 121 (Kinmount).....	40.5	185,096.91	81,242.08	266,338.99
504	Secondary Hwy. 620-Hwy. 28 (Chandos Lake Loop).....	30.9	93,709.91	61,953.26	155,663.17
505	Hwy. 46-Secondary Hwy. 503.....	12.7	120.08	14,100.12	14,220.20
506	Hwy. 41-Plevna.....	22.1	53,893.91	43,962.98	97,856.89
507	Hwy. 36-Gooderham.....	21.5	6,734.27	36,397.28	43,131.55
508	Burnstown-Black Donald Mine.....	24.0	66,259.26	24,242.80	90,502.06
509	Hwy. 7-Snow Road.....	13.1	138,104.22	26,713.59	164,817.81
510	Secondary Hwy. 520-Hwy. 124.....	1.9	83.52	5,775.20	5,858.72
511	Brightside-Secondary Hwy. 508 (Calabogie).....	20.5	15,959.70	22,227.87	38,187.57
512	Hwy. 41 (Eganville)-Hwy. 60.....	29.4	143,434.37	40,667.63	184,102.00
513	Hwy. 132 (Dacre)-Hyndford.....	10.2	Cr. 112.40	22,676.13	22,563.73
514	Hwy. 35-Interlaken.....	10.0	28,114.06	23,735.01	51,849.07
515	Quadeville-Hwy. 62 (Combermere).....	17.4	63,776.58	27,916.37	91,692.95
516	Port Sidney-Windermere.....	17.3	1,171.53	21,073.25	22,244.78
517	Hwy. 62-New Carlow.....	10.4	.....	17,730.23	17,730.23
518	Kearney-Hwy. 69.....	47.0	53,085.37	90,672.08	143,757.45
519	Hwy. 121-Red Stone Lake.....	34.7	7,430.41	60,845.23	68,275.64
520	Hwy. 11-Ardberg.....	33.6	.....	96,255.94	96,255.94
521	Hwy. 62 (South of Round Lake to North of Round Lake).....	11.5	4,173.21	13,050.06	17,223.27
522	Hwy. 11 (Trout Creek)- Loring.....	38.2	92,554.70	70,986.67	163,541.37
523	Hwy. 60 (Madawaska)- Cross Lake.....	13.5	.....	23,308.81	23,308.81
524	Secondary Hwy. 522- Secondary Hwy. 534.....	3.1	31.28	4,257.13	4,288.41
525	Gravenhurst-Muskoka Lake Sanitarium.....	1.7	.....	1,483.31	1,483.31
526	Hwy. 69-Britt.....	2.3	.....	16,818.28	16,818.28
527	Hwy. 118 (Baysville)-Hwy. 11B (Huntsville).....	14.9	3,800.70	18,588.45	22,389.15
528	Hwy. 64-Wolseley Bay.....	8.3	.....	18,027.28	18,027.28
528A	Secondary Hwy. 528-Pine Grove Landing.....	3.3	.....	7,653.71	7,653.71
529	Hwy. 69-Bayfield Wharf.....	3.0	135.41	17,488.98	17,624.39
530	Secondary Hwy. 519-Hwy. 35.....	12.5	572.05	31,987.50	32,559.55
531	Hwy. 17-Bonfield.....	2.4	.....	7,927.56	7,927.56
532	Hwy. 11-Hwy. 69.....	43.1	327,690.19	72,025.37	399,715.56
533	Hwy. 17 (Mattawa)-Hwy. 63.....	34.8	12,471.77	33,125.16	45,596.93
534	Hwy. 11B (Powassan)- Restoule.....	22.1	82,611.62	55,788.78	138,400.40
535	Hwy. 64 (Noelville)-Riviere Veuve.....	31.1	95,852.09	63,520.99	159,373.08
536	Hwy. 17-Creighton Mine.....	3.8	.....	7,979.87	7,979.87
537	Hwy. 69-Hwy. 17 (Wanapitei).....	13.8	21,556.34	34,121.92	55,678.26
538	Hwy. 17 East and West of Algoma.....	3.5	.....	10,464.43	10,464.43
539	Hwy. 17 (Warren)-Hwy. 64 (Field).....	26.4	34,972.64	46,726.83	81,699.47
539A	Secondary Hwy. 539-River Valley.....	.8	.....	1,238.18	1,238.18
540	Hwy. 68 (Little Current)- Meldrum Bay.....	88.0	34,423.28	158,225.02	192,648.30
541	Hwy. 17 (Sudbury)- Falconbridge and Skead.....	18.8	10,960.17	39,206.58	50,166.75

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
542	Hwy. 68-Secondary Hwy. 540 (Gore Bay).....	45.6	.....	93,257.46	93,257.46
543	Hwy. 69 (Sudbury)- 5.1 miles south.....	5.1	965.44	10,406.41	11,371.85
544	Sudbury-Geneva Lake Mine....	62.1	97,036.97	117,277.38	214,314.35
545	Secondary Hwy. 541-Milnet....	18.1	6,724.30	38,240.32	44,964.62
546	Hwy. 17-Mount Lake.....	49.8	34,588.38	76,123.25	110,711.63
547	Sudbury-Frood Mine.....	1.0	62.05	2,092.93	2,154.98
548	Hwy. 17-St. Joseph Island Rd.	43.7	6,199.55	108,178.18	114,377.73
549	Lake Panache-Hwy. 17.....	9.1	8,899.10	26,566.40	35,465.50
550	Hwy. 17 (Sault Ste. Marie)- Gros Cap.....	13.5	117,393.37	23,981.81	141,375.18
551	Secondary Hwy. 540 (West Bay)-Providence Bay.....	12.2	3,710.51	24,672.98	28,383.49
552	Island Lake-Goulais Bay.....	5.0	488.06	10,030.44	10,518.50
553	Hwy. 17 (Massey)-Richie Falls Camp.....	50.2	.....	70,633.91	70,633.91
554	Hwy. 129-Secondary Hwy. 546	10.9	9,760.09	11,943.37	21,703.46
555	Secondary Hwy. 557-Granary Lake Landing.....	7.0	50.00	19,356.15	19,406.15
556	Hwy. 17 (Heyden)-Christiana Mine.....	23.4	27,596.51	62,768.71	90,365.22
557	Hwy. 17 (Blind River)- Matinenda Lake.....	14.6	1,008.60	35,061.30	36,069.90
558	Hwy. 11 (Haileybury)- Montreal River.....	17.6	20,563.78	30,628.87	51,192.65
559	Nobel-Shawanaga.....	13.5	34,773.78	49,270.04	84,043.82
560	Hwy. 11 (Englehart)- Gogama and Westree.....	155.4	140,019.70	199,205.73	339,225.43
561	Hwy. 17 (Mines)-Dunns Valley	19.5	28,879.14	49,519.71	78,398.85
562	Hwy. 11-Hwy. 65.....	9.2	23,906.43	44,434.63	68,341.06
563	Hwy. 17-Batchawana Bay.....	3.4	91.15	4,560.49	4,651.64
564	Hwy. 112 (Tarzwell)-Blanche River.....	9.8	.....	16,759.67	16,759.67
565	Secondary Hwy. 550-Pte. Aux Pins.....	3.5	1,919.87	19,635.44	21,555.31
566	Hwy. 65 (Matachewan)- Ashely Mine.....	16.6	7,369.68	41,333.18	48,702.86
567	Hwy. 11 (North Cobalt)- Silver Centre.....	21.7	22,545.88	37,459.21	60,005.09
568	Hwy. 11-Kenogami.....	1.0	.....	11,981.73	11,981.73
569	Hwy. 11-Hwy. 11 (Englehart)..	34.5	14,558.79	52,550.18	67,108.97
570	Hwy. 11-Sesekinika.....	2.6	.....	34,747.07	34,747.07
571	Secondary Hwy. 562-Hwy. 11 (Earlton).....	3.8	8,595.02	13,970.71	22,565.73
572	Hwy. 11 (Ramore)-Holtyre....	5.0	23,222.06	10,765.95	33,988.01
573	Hwy. 11-Secondary Hwy. 560 (Charlton).....	12.5	1,903.68	20,800.95	22,704.63
574	Norembega-Secondary Hwy. 579.....	20.5	20,899.46	64,051.88	84,951.34
575	Hwy. 101 (Night Hawk Centre) to 3 miles south.....	3.0	.....	4,269.08	4,269.08
576	Hwy. 101-1.9 miles west.....	1.9	.....	3,962.71	3,962.71
577	Hwy. 101 (Shillington)- Hwy. 67 (Ansonville).....	15.8	48,447.37	19,791.38	68,238.75
578	Hwy. 11 (Nellie Lake)- Hwy. 67 (Iroquois Falls).....	5.6	57.13	22,505.34	22,562.47
579	Hwy. 11-Gardiner.....	22.6	40,219.97	61,077.42	101,297.39
580	Hwy. 11-DHO Park (Lake Nipigon).....	7.7	95.55	7,124.29	7,219.84
581	Hwy. 11-Remi Lake.....	3.6	.....	1,480.51	1,480.51
582	Hwy. 11 and 17-Hurkett- Hwys. 11 and 17.....	4.0	38,949.69	2,038.95	40,988.64
583	Mead-Lac Ste. Therese.....	31.7	14,685.28	91,091.12	105,776.40
584	Hard Rock Mine-Nakina.....	44.7	26,199.34	62,230.75	88,430.09
585	Hwys. 11 and 17-Pine Portage	22.9	312.01	47,151.31	47,463.32

HIGHWAY No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
586	Hwy. 11-3.3 miles west.....	3.3	33.45	1,928.99	1,962.44
587	Hwys. 11 and 17-Silver Islet....	26.0	24,324.06	39,004.91	63,328.97
588	Hwys. 11 and 17-Round Lake Road.....	33.7	49,017.82	58,495.11	107,512.93
589	Hwys. 11A and 17A-Dog Lake Road.....	18.7	17,697.78	33,271.52	50,969.30
590	Hwy. 130-Secondary Hwy. 595	25.1	11,894.91	76,821.51	88,716.42
591	Secondary Hwy. 589-4.9 miles north.....	4.9	680.92	10,361.51	11,042.43
592	Hwy. 11 (Novar)-Hwy. 11.....	9.8	83.77	7,705.22	7,788.99
593	Secondary Hwy. 588-Silver Mount Road.....	11.9	8,959.28	9,882.65	18,841.93
594	Dryden-Hwy. 17.....	22.6	8,693.56	16,319.78	25,013.34
595	Secondary Hwy. 590-Cloud Lake Road.....	28.0	4,082.99	45,669.74	49,752.73
596	Hwy. 17 (Keewatin)-Hwy. 17..	18.7	11,880.99	30,381.29	42,262.28
597	Secondary Hwy. 595- Secondary Hwy. 608.....	6.8	349.38	7,970.61	8,319.99
598	Secondary Hwy. 604-Hwy. 128	2.7	4,302.06	6,907.69	11,209.75
599	Savant Lake-Pickle Crow Mine	112.1	39,979.81	77,052.33	117,032.14
600	Hwy. 71-Hwy. 11 (Rainy Riv.)	59.8	27,242.57	53,564.43	80,807.00
601	Hwy. 17 (East of Dryden)- Hwy. 17 (Dryden).....	16.5	314.47	23,107.64	23,422.11
602	Hwys. 11 and 71 (Fort Frances) Hwys. 11 and 71 (Emo).....	30.7	3,835.27	28,361.23	32,196.50
603	Hwy. 17-Dyment.....	2.8	.....	1,283.58	1,283.58
604	Kenora-Hwy. 128.....	17.8	19,540.47	24,293.68	43,834.15
605	Hwy. 17-Rugby Lake.....	7.7	427.18	17,857.13	18,284.31
606	Hwy. 17-Markstay.....	1.0	1,253.73	2,357.14	3,610.87
607	Hwy. 64-French River.....	7.4	9,331.92	18,228.18	27,560.10
607A	Secondary Hwy. 607-Hwy. 69..	.4	.....	1,135.00	1,135.00
608	Hwy. 61 (Moose Hill)- Secondary Hwy. 595.....	11.9	10,051.36	39,808.93	49,860.29
609	Hwy. 105-Clay Lake Landing	10.1	2,415.70	4,452.72	6,868.42
610	Hwy. 67-Hwy. 101.....	12.6	.....	16,258.68	16,258.68
611	Secondary Hwy. 602-8.0 miles north of Hwys. 11 and 71....	12.5	1,448.33	8,129.92	9,578.25
612	Hwy. 69 (Footes Bay)-Hwy. 69 (Gordon Bay).....	7.1	167.43	8,593.64	8,761.07
613	Secondary Hwy. 602-Lake Despair Landing.....	25.5	2,087.25	46,500.95	48,588.20
614	Hwy. 17-Manitowadge.....	37.1	124,276.41	59,743.54	184,019.95
615	Hwy. 71-Lake Despair.....	14.4	3,217.75	19,205.72	22,423.47
616	Hwy. 101-Polomar CNR.....	2.0	.....	4,064.32	4,064.32
617	Hwy. 11 (Stratton)-Secondary Hwy. 600.....	14.4	6,371.83	25,627.52	31,999.35
618	Hwy. 105-Madson.....	7.3	7,625.23	28,171.91	35,797.14
619	Hwy. 11 (Pinewood)- Secondary Hwy. 621.....	25.3	8,390.40	27,540.34	35,930.74
620	Hwy. 62-Secondary Hwy. 504..	11.9	12,324.87	23,581.85	35,906.72
621	Hwy. 11 (Sleeman)-Lake of the Woods Dock.....	32.5	76,973.74	52,032.58	129,006.32
622	Hwy. 11-5.3 miles north.....	5.3	1,019.62	8,648.11	9,667.73
624	Hwy. 11 (Englehart)-Hwy. 66 (Larder Lake).....	27.0	21,000.00	19,398.08	40,398.08
625	Caramat-Hwy. 11.....	20.0	2,334.29	11,396.51	13,730.80
626	Hwy. 11 (Matheson)-Hwy. 11 (Porquis Jct.).....	20.3	127,050.72	25,821.52	152,872.24
627	Hwy. 11-Heron Bay.....	5.2	75.02	2,433.97	2,508.99
629	Hwy. 101 Timmins Airport	6.7	12,861.47	18,847.42	31,708.89
631	Hornepayne-Hwy. 11.....	45.2	50.72	77,749.64	77,800.36
633	Hwy. 11-Kawene.....	5.5	174,020.71	4,814.76	178,835.47
635	Hwy. 17-Ottawa River.....	1.6	.....	4,183.70	4,183.70
Total Expenditures Allocated to Secondary Highways			\$3,508,714.27	\$4,556,683.67	\$8,065,397.94

	CONSTRUCTION	MAINTENANCE	TOTAL
Ferries.....	\$ 6,455.40	\$ 282,991.78	\$ 289,447.18
Queensway, Toronto.....	14,700.00		14,700.00
Bloor Street, Toronto.....	50,755.48		50,755.48
Yonge Street, Toronto.....	33.50		33.50
Dundas Street, Toronto.....	467,759.02		467,759.02
Queensway, Ottawa.....	5,699,668.92	14,094.74	5,713,763.66
Eglinton Avenue, Toronto.....	2,500.00		2,500.00
Lakeshore Road, Toronto.....	4,378.35		4,378.35
Pelee Island.....		26,604.00	26,604.00
Burwash-Killarney.....	689,114.12		689,114.12
Hill Island Road.....	4,090.70	3,374.24	7,464.94
Geraldton Cut-off.....		189.81	189.81
Pellatt-Minaki.....		3,894.34	3,894.34
Sault Ste. Marie International Bridge.....	6,012.20		6,012.20
Sidewalks.....	21,422.96	942.18	22,365.14
Miscellaneous Surveys.....	135,216.35		135,216.35
Connecting Links.....	2,680,022.08	216,808.81	2,896,830.89
Unincorporated Township Roads.....	491,494.13	733,404.76	1,224,898.89
Development Roads.....	7,995,255.51	139,956.91	8,135,212.42
Development Road Adjustment.....	59,239.35		59,239.35
HIGHWAY TOTALS	\$131,705,041.04	\$27,727,300.61	\$159,432,341.65
Sundry Unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.....	2,206,927.35	7,272,744.03	9,479,671.38
TOTAL EXPENDITURES	\$133,911,968.39	\$35,000,044.64	\$168,912,013.03

APPENDIX No. 3

SCHEDULE OF CONTROLLED-ACCESS HIGHWAYS

April 1, 1960 to March 31, 1961

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
3	St. Thomas By-pass.....	30/61	
	Twp. of Yarmouth.....		3.63
	Twp. of Southwold.....		1.10
3	Canboro Diversion.....	56/61	
	Twp. of Canborough.....		2.22
	Twp. of North Cayuga.....		3.91
7	Thornhill By-pass.....	154/60	
	Twp. of Vaughan.....		2.86
11	Burk's Falls By-pass.....	286/60	
	Twp. of Armour.....		1.76
11	Earlton By-pass.....	102/60	
	Twp. of Armstrong.....		0.91
11	Holland Landing Diversion.....	132/60	
	Twp. of East Gwillimbury.....		2.54
11	Huntsville By-pass.....	325/60	
	Twp. of Brunel.....		0.07
11	Powassan By-pass.....	131/60	
	Twp. of South Himsworth.....		1.81
15	Carleton Place By-pass.....	56/61	
	Twp. of Beckwith.....		2.35
17	Pembroke Diversion.....	10/61	
	Twp. of Stafford.....		0.44
	Twp. of Alice.....		0.32
17	Verner By-pass.....	325/60	
	Twp. of Caldwell.....		0.07
60	Killaloe Station By-pass.....	334/60	
	Twp. of Hagarty.....		1.80
64	Noelville By-pass.....	255/60	
	Twp. of Martland.....		0.95
102	Hamilton To Dundas.....	56/61	
	City of Hamilton.....		0.77
	Town of Dundas.....		1.15
126	Highbury Avenue Extension.....	188/60	
	Twp. of Westminster and London.....		2.46
400	Toronto to North Bay.....	337/60	
	Twp. of North York.....		3.83
	Twp. of Vaughan.....		9.06
	Twp. of King.....		10.38
	Twp. of West Gwillimbury.....		10.97
	Twp. of Innisfil.....		12.26
	Twp. of Vespra.....		6.02
	Twp. of Vespra.....		7.90
401	Toronto to Quebec Boundary.....		

Hwy. No.		DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
	Twp. of Lancaster.....	15/61	9.09
	Twp. of Elizabethtown.....	256/60	.....
401	Toronto to Windsor.....	338/60	.....
	Twp. of Waterloo.....		5.63
403	Freeman to Wolfe Island.....	301/60	.....
	Town of Burlington.....		0.49
405	Homer to Queenston.....	58/61	.....
	Twps. of Niagara and Stamford.....		4.62
Q.E.W.	Toronto to Fort Erie.....	335/60	.....
	Twp. of Etobicoke.....		4.20
	Twp. of Toronto.....		8.48
	Twp. of Trafalgar.....		9.55
	Twp. of North Grimsby.....		6.04
	Homer Skyway.....	241/60	2.27
T.C.	Orillia to Manitoba Boundary.....	254/60	.....
	Twp. of Henvey.....		3.48
	Henvey Inlet Indian Reserve No. 2 and Unsurveyed Territory.....		4.51
	Twp. of Mowat.....		5.91
	Indian Reserve No. 13 and Island 3464.....		1.93
	Twp. of Bigwood.....		7.31
	Twp. of Delamere.....		2.80
	Twp. of Cox.....		3.94
	Twp. of Servos.....		8.26
	Twp. of Secord.....		0.81
	Twp. of Burwash.....		5.49
	Twp. of Dill.....		3.48
	Twp. of Humphry.....		4.58
	Twp. of Medora.....		2.98
	Twps. of Humphry, Conger and Foley.....		4.27
	Twp. of Foley.....		10.00
	Twp. of McDougall.....		2.77
	Twp. of McDougall.....		6.17
	Sault Ste. Marie Northerly.....		18.25
27	Brown's Line.....		.....
	Richview Side Road — Twp. of Etobicoke.....	333/60	.....
	Dixon Road -- Twp. of Etobicoke.....		.....
17	Ottawa Queensway (17) — City of Ottawa.....		.....
	Pinecrest Road.....	161/60	.....
	Woodroffe Avenue.....		.....
	Maitland Avenue.....		.....
	Carling and Kirkwood Avenues.....	336/60	.....
	Parkdale Road.....		.....
	Rochester Street.....		.....
	Bronson Avenue and Percy Street.....		.....
	Bank Street.....		.....
	The Driveway.....		.....
	Main Street.....		.....
	Nicholas Street.....		.....
	St. Laurent Boulevard .....		.....
Q.E.W.	Toronto to Fort Erie.....		.....
	Hwy. 27 — Twp. of Etobicoke.....	335/60	.....
	Hwy. 10.....		.....
	Mississauga Road.....		.....
	Shook's Hill Road.....		.....
	Upper Middle Road — Twp. of Trafalgar.....		.....
	Hwy. 122.....		.....
	Oakville Side Road.....		.....

Hwy. No.		DESIGNATED BY ONTARIO REGULATION		MILEAGE
		NUMBER		
	Kerr Street			
	Bronte Road			
	Hwy. 25 — Town of Burlington			
	Fruitland Side Road — Twp. of Saltfleet			
401	Toronto to Quebec Boundary			
	Courtice Road — Twp. of Darlington	189/60		
	Waverly Road			
	Bennett Road			
401	Toronto to Windsor			
	Nelson Street — Twp. of Nassagaweya	103/60		
	Hornby Road — Twp. of Trafalgar	271/60		
	Hwy. 24 — Twp. of Waterloo	231/60		
	Hwy. 8			
	County Road 6			
	Hwy. 59 — Twp. of East Oxford	57/61		
TOTAL MILEAGE AS OF MARCH 31, 1961				1,363.93
TOTAL MILEAGE DESIGNATED DURING FISCAL YEAR ENDING MARCH 31, 1961				238.85

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND RE-DESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1961

This schedule includes:

- Designations of (a) Newly assumed highways.
(b) Newly constructed highways
and diversions.
(c) Interchanges.
- Re-Designations of widened highways.

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma	P-2974-15	Hunt	Sept. 15/60	17 T.C.	8.210
	P-3140-2	Knowles	Sept. 1/60	17 T.C.	1.199
	P-3140-3	Knowles	Sept. 1/60	17 T.C.	0.786
	P-3180-7	64	Sept. 15/60	17 T.C.	7.192
	P-3150-1	66	Sept. 1/60	17 T.C.	0.502
	P-3251-9	30 Range 17	Sept. 15/60	17 T.C.	4.420
	P-3250-4	30 Range 18	Sept. 15/60	17 T.C.	6.468
	P-3406-3	30 Range 19	Oct. 20/60	17 T.C.	6.350
	P-3312-1	30 Range 21	Sept. 15/60	17 T.C.	3.397
	P-3324-8	30 Range 22	Sept. 29/60	17 T.C.	5.340
	P-3245-10	30 Range 23	Sept. 15/60	17 T.C.	5.630
	P-3216-3	30 Range 27	Sept. 15/60	17 T.C.	2.330
	P-3357-2	31 Range 21	Sept. 15/60	17 T.C.	4.750
	P-3311-2	31 Range 22	Sept. 15/60	17 T.C.	3.500
	P-3211-8	31 Range 27	Sept. 15/60	17 T.C.	7.733
	P-3217-2	32 Range 27	Sept. 1/60	17 T.C.	1.515
	P-3210-7	32 Range 28	Oct. 20/60	17 T.C.	6.810
	P-3215-10	29 Range 16	Sept. 29/60	17 T.C.	6.290
	P-3253-2	29 Range 17	Sept. 15/60	17 T.C.	3.496
	P-3327-3	29 Range 23	Sept. 15/60	17 T.C.	1.500

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
Carleton	P-3409-1	City of Ottawa	April 7/60	17 T.C.	0.190
	P-3409-2	City of Ottawa	April 7/60	17 T.C.	0.230
	P-3409-3	City of Ottawa	April 7/60	17 T.C.	0.140
	P-3409-5	City of Ottawa	Oct. 20/60	17 T.C.	0.740
	P-3409-6	City of Ottawa	Sept. 15/60	17 T.C.	0.210
	P-3409-7	City of Ottawa	Sept. 15/60	17 T.C.	0.150
	P-3409-8	City of Ottawa	Oct. 20/60	17 T.C.	0.190
	P-3409-9	City of Ottawa	Oct. 20/60	17 T.C.	0.510
	P-3409-10	City of Ottawa	Sept. 15/60	17 T.C.	0.250
	P-3409-11	City of Ottawa	Sept. 29/60	17 T.C.	0.090
	P-3409-12	City of Ottawa	Sept. 15/60	17 T.C.	0.090
	P-3409-13	City of Ottawa	Oct. 20/60	17 T.C.	0.260
Durham	P-2001-21	Clarke	Jan. 19/61	2	7.230
	P-2695-62	Darlington	May 12/60	401	
	P-2695-63	Darlington	April 26/60	401	Interchange
	P-2695-64	Darlington	May 5/60	401	Interchange
	P-1656-29	Hope	Nov. 30/60	2	6.860
Elgin	P-2374-18	Yarmouth	Mar. 2/61	74	0.060
Glengarry	P-3178-9	Lancaster	Dec. 21/60	401	9.090
Haldimand	P-1692-17	Canborough	Nov. 30/60	3	2.220
	P-1928-29	North Cayuga	Nov. 30/60	3	3.910
Halton	P-1555-21	Nelson	July 14/60	5	6.050
	P-2070-128	Nelson	Nov. 3/60	Q.E.W.	
	P-1939-136	Trafalgar	Oct. 20/60	Q.E.W.	Interchange
	P-1939-137	Trafalgar	Oct. 20/60	Q.E.W.	Interchange
	P-1939-138	Trafalgar	Sept. 1/60	Q.E.W.	Interchange
	P-1939-139	Trafalgar	Aug. 18/60	Q.E.W.	Interchange
	P-1939-140	Trafalgar	Aug. 18/60	Q.E.W.	0.810
	P-1939-141	Trafalgar	Sept. 15/60	Q.E.W.	9.550
	P-2074-34	Trafalgar	July 14/60	5	6.746
	P-3170-25	Trafalgar	Sept. 15/60	401	Interchange
Kenora	P-3552-3	Coyle	July 14/60	17 T.C.	6.250
	P-2498-4	Ewart	Mar. 31/60	17 T.C.	6.200
	P-2226-26	Mutrie	Dec. 21/60	17 T.C.	6.500
Lambton	P-2035-32	Plympton	Aug. 11/60	7	11.310
	P-1943-7	Warwick	June 16/60	22	2.270
Lanark	P-1796-34	Beckwith	Nov. 30/60	15	2.360
Leeds	P-3095-107	Elizabethtown	June 9/60	401	0.530
Lincoln	P-2115-58	Clinton	Nov. 30/60	Q.E.W.	5.950
	P-2114-80	N. Grimsby	Nov. 3/60	Q.E.W.	5.980
	P-2141-111	Grantham	Nov. 30/60	Q.E.W.	Interchange
	P-2141-112	Grantham	Nov. 30/60	Q.E.W.	Interchange
	P-2141-105	Grantham	June 16/60	Q.E.W.	2.270
	P-3541-3	Niagara	Aug. 18/60	Q.E.W.	5.010
Manitoulin	P-2689-7	Howland	July 14/60	68	5.570
	P-2460-17	Sheguiandah	July 14/60	68	5.460
Middlesex and Huron	P-1691-42	Biddulph, Stephen and McGillivray	Dec. 21/60	4	10.740
Middlesex	P-2870-17	Caradoc and Adelaide	June 16/60	22	11.960
	P-1998-25	Caradoc	Aug. 4/60	2	4.580
	P-2003-25	Delaware	Feb. 9/61	2	4.240
	P-2053-18	Ekfrid	Nov. 30/60	2	9.080
	P-2672-38	Lobo	Aug. 18/60	22	8.070
	P-1813-32	London	June 2/60	22	6.060
	P-1429-45	Mosa	Dec. 8/60	2	11.240

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
	P-2719-22	Westminster	April 7/60	4	4.990
	P-1988-59	Westminster	May 26/60	2	7.590
Muskoka	P-7043-1	Freeman	Oct. 20/60	612	3.900
	P-3300-6	Macaulay	Aug. 18/60	532	1.590
	P-3266-20	McLean	Oct. 27/60	118	.190
Nipissing	P-3437-1	Finlayson	Sept. 15/60	60	5.530
Northumberland	P-1925-23	Cramahe	Feb. 2/60	2	5.090
	P-1947-18	Hamilton	Nov. 30/60	2	7.050
Ontario	P-1922-16	Pickering	Nov. 30/60	2	9.200
	P-2755-6	Reach	Dec. 8/60	47	4.470
	P-1410-43	Whitby	Nov. 9/60	12	9.360
	P-1771-8	Whitby	June 29/60	7	2.830
	P-1811-13	Whitby	Aug. 4/60	2	2.060
Oxford	P-3046-44	East Oxford	Dec. 21/60	401	
Parry Sound	P-2910-49	N. Himsworth	July 7/60	11	.740
	P-7048	Humphrey and Conger	Oct. 20/60	612	2.500
Peel	P-2002-13	Chinguacousy	June 9/60	10	10.760
	P-1659-45	Toronto	Nov. 30/60	10	9.600
	P-1857-191	Toronto	Aug. 25/60	Q.E.W.	Interchange
	P-1857-192	Toronto	Aug. 18/60	Q.E.W.	Interchange
	P-1857-193	Toronto	Aug. 18/60	Q.E.W.	Interchange
	P-1857-194	Toronto	Sept. 15/60	Q.E.W.	8.480
Perth	P-2206-85	Fullerton	July 14/60	8	1.000
Prescott	P-1981-27	E. Hawkesbury	Jan. 19/61	17	2.000
Simcoe	P-1973-16	Tecumseh	Nov. 30/60	27	12.000
	P-2847-95	Vespra	Sept. 15/60	400	
	P-2759-70	W. Gwillimbury	Oct. 27/60	400	10.970
	P-2756-73	Innisfil	Nov. 17/60	400	12.260
	P-2847-94	Vespra	July 7/60	400	6.020
Stormont	P-3147-29	Cornwall	Feb. 11/60	401	3.270
Sudbury	P-3054-8	McKim	Sept. 1/60	544	1.710
	P-3350-9	Mongowin	Oct. 27/60	68	1.520
	P-2718-18	Rayside	Sept. 15/60	544	1.180
	P-3255-1	Snider	Sept. 1/60	544	.950
Temiskaming	P-7052	Catharine	Oct. 20/60	624	5.000
	P-2877-30	Coleman	Oct. 20/60	11	2.200
	P-2182-26	Evanturel	Dec. 21/60	11	6.820
	P-7055	Evanturel and Marter	Oct. 20/60	624	3.750
	P-2123-23	Gillies Limit	Oct. 20/60	11	7.610
	P-7053	Hearst	Oct. 27/60	624	6.380
	P-3348-20	Lebel	Aug. 25/60	66	6.890
	P-7054	Marter	Oct. 27/60	624	6.380
	P-7051	Skead	Nov. 30/60	624	3.880
Thunder Bay	P-2164-4	81	Nov. 30/60	17 T.C.	6.631
	P-3131-5	Leslie	Sept. 1/60	17 T.C.	5.881
	P-2914-29	Pic.	Sept. 1/60	17 T.C.	11.072
	P-3149-1	71	Sept. 1/60	17 T.C.	1.070
	P-3136-1	74	Sept. 1/60	17 T.C.	8.195
	P-3072-1	77	Nov. 9/60	17 T.C.	7.390
	P-3088-1	79	Nov. 30/60	17 T.C.	0.620
	P-3132-12	Unsurveyed Territory	Sept. 15/60	17 T.C.	9.900

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	Hwy. No.	MILES
Waterloo	P-3092-75	Waterloo	May 19/60	401	Interchange
	P-3092-79	Waterloo	May 26/60	8 and 401	Interchange
	P-3092-78	Waterloo	May 12/60	401	
	P-3092-102	Waterloo	Nov. 9/60	401	5.630
Welland	P-2511-51	Bertie	Oct. 27/60	Q.E.W.	0.710
Wentworth	P-1411-16	Ancaster	Nov. 9/60	102	0.770
	P-1640-27	W. Flamborough	Dec. 21/60	102	0.850
	P-2113-191	Saltfleet	April 12/60	Q.E.W.	Interchange
	P-2113-194	Saltfleet	Oct. 27/60	Q.E.W.	Interchange
	P-2792-36	E. Flamborough	June 16/60	403	0.490
York	P-1960-101	Etobicoke	Aug. 18/60	Q.E.W.	0.460
	P-1960-102	Etobicoke	Aug. 18/60	Q.E.W.	Interchange
	P-1960-103	Etobicoke	Sept. 15/60	Q.E.W.	4.200
	P-2083-136	Etobicoke	Oct. 20/60	27	Interchange
	P-1967-35	King	Dec. 8/60	27	0.850
	P-1716-64	Vaughan	June 16/60	7	9.210
	P-2083-137	Etobicoke	Sept. 29/60	27	0.192
	P-2758-70	Vaughan	Oct. 20/60	400	9.060
	P-2752-83	King	Oct. 20/60	400	10.380
	P-2760-35	North York	Oct. 20/60	400	3.830

APPENDIX No. 3B

**SCHEDULE OF REVERSIONS AND TRANSFERS OF SECTIONS OF
THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS
FOR THE FISCAL YEAR ENDING MARCH 31, 1961**

COUNTY OR DISTRICT	PLAN Nos.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-2253-46.....	Thessalon.....	Dec. 30/60	17 T.C.	0.880
Bruce.....	P-2896-13.....	Village of Lucknow.....	Mar. 31/60	86	0.770
Cochrane.....	P-3331-9.....	Kendall.....	May 7/60	583	0.432
	P-2608-32.....	Kendall.....	Aug. 6/60	583	1.098
	P-2879-29.....	Kendrey.....	July 16/60	583	0.947
Dufferin.....	P-1835-34.....	Mono.....	Jan. 20/61	24	0.250
Elgin.....	P-1450-56.....	Southwold.....	Jan. 20/61	3	0.038
Frontenac.....	P-2398-34.....	Kingston.....	May 7/60	38	0.510
Glengarry.....	P-2883-17.....	Kenyon and Lochiel.....	Mar. 11/61	43	0.210
	P-1924-29.....	Lochiel..... (Town of Alexandria)	April 1/61	34	0.570
Grey.....	P-1985-26.....	Bentinck.....	Dec. 3/60	4	0.500
	P-1908-38.....	St. Vincent.....	April 1/61	26	0.420
Halton.....	P-2842-12.....	Esquesing.....	Nov. 26/60	25	0.190
Huron.....	P-2766-40.....	Turnberry.....	Jan. 7/61	86	0.019
Lambton.....	P-2822-3.....	Warwick.....	Nov. 26/60	79	0.840
Lanark.....	P-2007-42.....	Drummond.....	Sept. 10/60	15	3.400
	P-2007-43.....	Drummond.....	Aug. 20/60	15	1.820
	P-2007-44.....	Drummond.....	Sept. 10/60	15	0.660
	P-2007-45.....	Drummond.....	Aug. 20/60	15	0.019
Leeds.....	P-1987-57.....	Elizabethtown.....	June 18/60	29	0.365
	P-2406-11.....	Yonge (Village of Athens).....	July 16/60	42	0.780
	P-3337-12.....	Leeds..... (Town of Gananoque)	April 1/61	2	0.230
Lennox and Addington.....	P-2062-37.....	Kaladar.....	Nov. 19/60	41	0.410
Manitoulin.....	P-2460-18.....	Sheguiandah.....	Feb. 18/61	68	1.690
	P-2689-8.....	Howland.....	Feb. 18/61	68	1.820
Middlesex.....	P-2003-27.....	Delaware.....	April 1/61	2	0.190
Middlesex and Perth.....	P-1958-18.....	Blanshard and West Nissouri.....	Jan. 20/61	86	0.260
	P-3300-7.....	Macaulay.....	Nov. 19/60	532	.300
Nipissing.....	P-2136-49.....	West Ferris.....	Nov. 19/60	11	.760
	P-2909-5.....	Springer.....	Dec. 3/60	64	.410
Ontario.....	P-1410-41.....	Whitby.....	April 30/60	12	0.880
	P-1811-12.....	Whitby.....	May 7/60	2	1.930
Oxford.....	P-3046-43.....	East Oxford.....	Dec. 9/60	401	9.370
Peel.....	P-1899-28.....	Chinguacousy.....	Mar. 11/61	7	1.100

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Perth.....	P-2206-83.....	Logan.....	April 30/60	8	1.060
	P-2212-30.....	Mornington and Ellice.....	Jan. 20/61	19	0.490
	P-2212-31.....	Mornington, N. Easthope and Ellice.....	Jan. 20/61	19	0.630
Prince Edward.....	P-1508-34.....	Ameliasburgh.....	April 1/60	14	3.400
Renfrew.....	P-3303-4.....	Richards.....	Feb. 18/61	62	2.950
	P-2655-30.....	Wilberforce.....	July 16/60	60, 41	0.280
	P-2655-31.....	Wilberforce.....	Aug. 13/60	60	0.070
Simcoe.....	P-2759-68.....	Gwillimbury W.....	Dec. 3/60	400	0.850
	P-2759-69.....	Gwillimbury W.....	Dec. 3/60	400	0.890
	P-2756-77.....	Innisfil.....	Feb. 9/61	400	0.810
	P-1920-43.....	Tay.....	April 30/60	12	.120
	P-1920-44.....	Tay.....	May 7/60	12	.940
Stormont.....	P-1575-31.....	Osnabruck.....	Nov. 19/60	2	0.057
Sudbury.....	P-3290-6.....	Levack.....	Nov. 19/60	544	.440
	P-7058.....	McKim.....	Nov. 18/60	547	1.000
Thunder Bay.....	P-2118-8.....	Neebing.....	April 1/61	17 T.C.	0.520
	P-2461-68.....	Nipigon.....	Sept. 24/60	17 T.C.	0.083
	P-2461-69.....	Nipigon.....	Jan. 7/61	17 T.C.	0.940
Waterloo.....	P-1549-40.....	Wilmot.....	May 28/60	7B, 8B	0.300
	P-1549-41.....	Wilmot.....	June 18/60	7B, 8B	0.390
	P-2078-14.....	Waterloo.....	Sept. 17/60	85	0.950
	P-2437-34.....	Woolwich.....	Jan. 20/61	86	2.180
	P-2882-33.....	N. Dumfries.....	Feb. 18/61	97	0.284
	P-3246-2.....	N. Dumfries.....	Feb. 18/61	24A	0.485
	P-1776-9.....	N. Dumfries.....	Feb. 18/61	24	0.400
	P-2437-35.....	Woolwich.....	Dec. 30/60	86	0.260
Welland.....	P-2425-84.....	Stamford.....	June 25/60	Rainbow Bridge Cut-off	0.113
Wellington.....	P-2440-17.....	Erin.....	July 23/60	24	1.250
	P-1983-22.....	Village of Clifford.....	Aug. 19/60	9	0.244
	P-1983-23.....	Village of Clifford.....	Aug. 19/60	9	0.244
Wentworth.....	P-1894-37.....	E. Flamborough.....	June 25/60	2	0.820
York.....	P-2083-135.....	Etobicoke.....	Sept. 1/60	27	0.300
	P-2083-138.....	Etobicoke.....	Nov. 30/60	27	0.100
	P-3117-29.....	Markham.....	Feb. 9/61	48	0.950
	P-1938-147.....	Scarborough.....	Dec. 30/60	2	0.045
	P-1698-93.....	Vaughan.....	June 25/60	11	0.253

APPENDIX No. 3C

**SCHEDULE OF EXISTING ROADS ASSUMED AS PORTIONS OF THE
KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR
THE FISCAL YEAR ENDING MARCH 31, 1961**

COUNTY OR DISTRICT	PLAN NOS.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
Algoma.....	P-8012.....	29 Range 23.....	Oct. 20/60	101	1.500
Brant.....	P-1997-55.....	Brantford.....	Jan. 20/61	2	0.410
Carleton.....	P-1591-52.....	Nepean.....	Sept. 23/60	16	1.970
Elgin.....	P-2058-64.....	Yarmouth.....	Nov. 9/60	74	0.083
	P-2058-67.....	Yarmouth.....	Feb. 22/61	3	0.019
Halton.....	P-1555-20.....	Burlington (Town).....	April 28/60	5	0.260
Kenora.....	P-2245-12.....	Melick.....	Feb. 24/61	604	2.300
Lanark.....	P-1796-33.....	Beckwith.....	July 13/60	7, 15	0.190
Middlesex.....	P-4023-2.....	London.....	Mar. 15/61	126	0.110
Muskoka.....	P-7043.....	Freeman.....	Sept. 19/60	612	3.750
Ontario.....	P-1410-44.....	Ontario.....	Sept. 22/60	12	0.007
Parry Sound.....	P-2127-44.....	Armour.....	Feb. 8/61	11	0.380
	P-2910-49.....	North Himsworth.....	June 2/60	11	0.740
Perth.....	P-2206-84.....	Logan and Fullarton.....	May 11/60	8	0.980
Prescott.....	P-1981-27.....	West Hawkesbury.....	Oct. 26/60	17	2.000
Simcoe.....	P-2783-6.....	Essa.....	Nov. 21/60	90	0.150
Thunder Bay.....	P-3122-8.....	Oliver.....	Jan. 19/61	590	0.070
	P-2895-15.....	Paipoonge.....	Feb. 24/61	130	0.653
Timiskaming.....	P-7052.....	Catharine.....	Sept. 15/60	624	5.000
	P-7055.....	Evanturel and Marter.....	Sept. 15/60	624	3.750
	P-7053.....	Hearst.....	Sept. 15/60	624	6.380
	P-7054.....	Marter.....	Sept. 15/60	624	6.380
	P-7051.....	Skead.....	Sept. 16/60	624	3.880
Waterloo.....	P-2882-28.....	North Dumfries.....	Jan. 10/61	97(old)	1.450
	P-2882-29.....	North Dumfries.....	Dec. 13/60	97(old)	2.060
	P-2882-30.....	North Dumfries.....	Dec. 19/60	97(old)	2.080
	P-2882-31.....	North Dumfries.....	Jan. 10/61	97(old)	1.190
	P-2882-32.....	North Dumfries.....	Dec. 13/60	97(old)	2.100
	P-3092-98.....	Waterloo and Town of Preston.....	Nov. 8/60	401	0.210
York.....	P-5026.....	Vaughan.....	Feb. 21/61	Bathurst St.	1.250
York and Peel.....	P-5001-2.....	Vaughan and Toronto Gore.....	Mar. 8/61	50	1.260

APPENDIX No. 4

BRIDGES COMPLETED DURING 1960

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Agawa River Bridge	Steel through truss	320'	Hwy. 17 T.C. Wawa-Agawa	29	...	Range XVI	Algoma	15
Algoma Central and H. Bay Rwy. Subway	Steel plate girder	55'	Hwy. 17 T.C. S.S. Marie-Montreal R.	Tarentorus	...	NE ¼ Sec. 18	Algoma	18
Bernard Creek Bridge	Concrete rigid frame ext.	40'	Hwy. 11 Burks Falls-Sundridge	Strong	7-8	IV	Parry Sound	13
Big Creek Bridge No. 5	Concrete rigid frame	40'	Hwy. 40 Chatham-Sarnia	Chatham and Dover	1 and 24	IX	Kent	1
Big Otter Creek Bridge	Composite steel beam	64'-6"/86' / 64'-6"	Dev. Rd. 382 Griffin Cors.-Calton	Bayham	4	IV	Elgin	2
Blanche River Bridge (Judge Bridge)	Steel low truss	120'-8" / 119'- 10" / 100'-2"	Hwy. 65 New Liskeard-Quebec B.	Casey	9	II	Timiskaming	14
Blenheim Twp. Bridge No. 2 (Nith River Bridge)	Continuous steel plate girder	72' / 96' / 72'	Hwy. 401 Eastwood-Preston	Blenheim	2	X	Oxford	2
Blenheim Twp. Bridge No. 3 (10th Conc. Rd.)	Concrete rigid frame (Twin-structure)	41'-9"	Hwy. 401 Eastwood-Preston	Blenheim	6-7	IX	Oxford	2
Blenheim Twp. Bridge No. 4 (9th Conc. Rd.)	Concrete rigid frame	2 @ 60'	Hwy. 401 Eastwood-Preston	Blenheim	12-13	VIII	Oxford	2
Blenheim Twp. Bridge No. 5 (8th Conc. Rd.)	Concrete rigid frame (Twin-structure)	39'-10"	Hwy. 401 Eastwood-Preston	Blenheim	15	VII-VIII	Oxford	2
Blenheim Twp. Bridge No. 6 (C.N.R. Overhead)	Continuous concrete slab (Twin-structure)	36' / 50' / 36'	Hwy. 401 Eastwood-Preston	Blenheim	15	VII	Oxford	2
Blenheim Twp. Bridge No. 9 (C.P.R. Overhead)	Continuous concrete girder (Twin-structure)	46' / 62' / 46'	Hwy. 401 Eastwood-Preston	Blenheim	20	VI	Oxford	2
Blenheim Twp. Bridge No. 11 (Honer Creek)	Rigid frame girder (Twin-structure)	2 @ 45'	Hwy. 401 Eastwood-Preston	Blenheim	24	V	Oxford	2
Boston Creek Bridge	Concrete rigid frame	80'	Hwy. 6 Caledonia-Hagersville	Oneida	12	IV	Haldimand	4
Boyne River Bridge	Concrete rigid frame	40'	Hwy. 69 T.C. Hayes Cor s.- P. Sound	Foley	139	B	Parry Sound	11
Brant Twp. C.N.R. Overhead	Continuous concrete "T" beam	40' / 63' / 40'	Hwy. 4 Hanover westerly	Brant	72	I	Bruce	5

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Brighton Twp. Bridge No. 2 (Hwy. 30 Interchange)	Continuous concrete box girder	52' 121'-9" / 52'	Hwy. 401 Colborne-Brighton	Brighton	4	IV	Northumberland	7
Cayuga North Twp., C.N.R. Overhead	Simple composite steel beam	44' 56' 44"	Hwy. 54 Caledonia Cayuga	Cayuga North	30-31	I N	Haldimand	4
Charlottenburg Twp. Bridge No. 4 (C.N.R. Overhead)	Simple composite steel beam	69'-4" 70' / 69'-4"	Hwy. 401, Johnston-Quebec B.	Charlottenburg	6	II	Glenagarry	9
Colborne Twp. C.P.R. Subway	Steel plate girder	52'	Hwy. 21 Salter Pt. Albert	Colborne		Block C	Huron	3
Cramahe Twp. Bridge No. 2	Continuous concrete box girder	47' 121' 36'	Hwy. 401 Brighton-Cramahe	Cramahe	30	III	Northumberland	7
Cramahe Twp. Bridge No. 3	Continuous concrete box girder	48' 110' 42'	Hwy. 401 Colborne-Brighton	Cramahe	28-29	III	Northumberland	7
Credit River Bridge (twindam)	Concrete arch rib and concrete beam appr. spans	65'-5" 4 @ 155' / 57'-7" 51'-6"	Q.E.W. Toronto-Oakville	Toronto	5 & 8	II	Peel	6
Dumfries N. Twp. Br. No. 5 (Old Hwy. 97)	Continuous concrete girder	31'-6" 63'-9" / 63'-9" 31'-6"	Hwy. 401 Eastwood-Preston	Dumfries N.	25 & 31	XI-XII	Waterloo	2
Dumfries N. Twp. Br. No. 8 (Hwy. 97)	Continuous concrete girder	49' 85'-7" / 85'-7" 41'	Hwy. 401 Eastwood Preston	Dumfries N.	31	X-XI	Waterloo	2
Dumfries N. Twp., C.P.R. Overhead	Continuous steel girder	52' 66' 52'	Hwy. 97 Galt Hickson	Dumfries N.	27	X	Waterloo	3
Ernestown Twp. Br. No. 13 (Twin-structure)	Concrete rigid frame (Twin-structure)	55'	Hwy. 401 Odessa Hwy. 38	Ernestown	33	IV	Lennox-Addington	8
Fairchild Creek Bridge	Continuous composite steel beam	47'-6" 70' / 47'-6"	Hwy. 54 Caledonia Brantford	Onondaga	40 & 21	III E	Brant	4
Fleetwood Creek Bridge	Concrete rigid frame box culvert	2 @ 20'	Hwy. 7A Hwy. 35-Bethany	Manvers	21 22	VII VIII	Durham	7
Fredericksburg N. Twp. Bridge No. 1 (Napanee River)	Concrete rigid frame	27' 6" 45' / 27' 6"	Hwy. 401 Napanee Odessa	Richmond-Fredericksburg	28 & 23	I & VIII	Lennox-Addington	8
Goulais River Bridge	Steel through truss	300'	Hwy. 17	Vankoughnet	SW 1/4	Sec. 30	Algoma	18
Haldimand Twp. Bridge No. 4	Prestressed concrete beam	135' 9"	Hwy. 401 Cobourg Grafton	Haldimand	32	I-II	Northumberland	7
Hamilton Twp. Bridge No. 1	Continuous concrete hollow girder	54' 105' 6" / 54'	Hwy. 401 Port Hope-Cobourg	Hope-Hamilton	35-1	I	Durham-Northumberland	7

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Hamilton Twp. Bridge No. 4	Concrete rigid frame	34'	Hwy. 401 Port Hope-Cobourg	Hamilton	28-29	I	Northumberland	7
Hamilton Twp. Bridge No. 7	Concrete rigid frame girder	118'-6"	Hwy. 401 Port Hope-Cobourg	Hamilton	20-21	I	Northumberland	7
Hamilton Twp. Br. No. 11 (Hwy. 45 Interchange)	Continuous concrete box girder	30'/117'-2"/117'-2"/30'	Hwy. 401 Port Hope-Cobourg	Hamilton	16	I	Northumberland	7
Hogas Hollow Bridge West Bound Lane	Steel deck truss	2 @ 60'/2 @ 138'/6 @ 140'	Hwy. 401 Toronto By-pass	North York	13	I	York	6
Ivanhoe River Bridge	Cresotated timber	3 @ 50'	Resources Rd.	Foleyet	7	VI	Sudbury	14
Innisfil Twp., C.N.R. Overhead	Concrete rigid frame	36'-1"	Hwy. 400 Toronto-Barrie	Innisfil	6-7	VIII	Simcoe	6
Jackfish River Bridge	Steel plate girder	2 @ 85'-9"	Hwy. 17 T.C. Nipigon-Schreiber	91	....	....	Thunder Bay	19
Jackpine River Bridge	Steel beam	80'	Hwy. 17 T.C. Nipigon-Schreiber	91	....	....	Thunder Bay	19
Kaibuskong River Bridge	Steel plate girder	120'	Hwy. 17, Jct. Hwy. 94-Hwy. 331	Bonfield	14	XI	Nipissing	13
Kapusking River Bridge (East Channel)	Steel plate girder	130'	Hwy. 11 Hearst-Cochrane	O'Brien	22	XIII-XIV	Cochrane	16
Kapusking River Bridge (West Channel)	Continuous steel beam	64'/86'/86'/64'	Hwy. 11 Hearst-Cochrane	O'Brien	22	XIII-XIV	Cochrane	16
Little Baptiste Creek Bridge	Concrete rigid frame	35'	Hwy. 401 Service Rd. Tilbury 4th Conc. Rd.	Tilbury East	14-15	IV	Kent	1
MacKenzie Creek Bridge	Concrete rigid frame	34'-9"/47'-6"/34' 9"	Hwy. 6, Caledonia-Hagersville	Oneida	4	Range E	Haldimand	4
Madawaska River Bridge (Combermere Bridge)	Steel plate girder	2 @ 118'	Hwy. 62, Combermere-Barrys Bay	Radcliffe	6	V	Renfrew	10
Maitland Ave. Bridge No. 3	Steel plate girder	2 @ 115'	Ottawa Queensway	.....	....	....	Carleton	9
Merritt Twp., C.P.R. Overhead	Concrete rigid frame	30'-7"/31'-8"/30' 7"	Hwy. 68, Espanola-Little Current	Merritt	2	I	Sudbury	17
Merivale Rd. Bridge No. 36	Concrete rigid frame (Twin-structure)	46' 2"	Ottawa Queensway	.....	....	....	Carleton	9
Montreal River Bridge (Latchford Bridge)	Steel arch (through type)	350'	Hwy. 11 Temagami-Cobalt	Gillies Limit	....	Block 21	Timiskaming	14

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Nelles Creek Bridge	Concrete barrel arch	30'	Hwy. 11 Hearst easterly	Kendall	18	X	Cochrane	16
Nottawasaga River Bridge	Concrete rigid frame	45'	Hwys. 10 and 24 Camilla Primrose	Mono	22	I II W.H.S.	Dufferin	5
Oakville Creek Bridge	Steel arch truss	2 @ 150' 3 @ 200'	Hwy. 5 Toronto Paris	Trafalgar	22 23	I	Halton	4
Oakville Creek Bridge (widening)	Concrete arch rib and concrete beam appr.	2 @ 49'-7" 3 @ 50'-10" 2 @ 136'-7"	Q.E.W. at Oakville	Trafalgar	16	II III S.D.S.	Halton	6
Old Woman River Bridge	Steel plate girder	98' 6"	Hwy. 17 T.C. Wawa-Agawa	31	...	Rouge XXI	Albion	15
Otonabee River Bridge	Steel plate girder	61' 81' 61' 2 @ 150' 210' 42' 3 @ 64'	Hwy. 7 T.C. Hwy. 28-Hwy. 7	N. Monaghan Otonabee	12 & 25	X & XIV	Peterboro	7
Quimet, C.P.R. Overhead	Steel beam	7 @ 56'	Hwy. 17 T.C. Nipigon Port Arthur	Dorion	1	IV	Thunder Bay	19
Ozone Creek Culvert	Concrete rigid frame box (Culvert type)	2 @ 16'	Hwy. 17 T.C. Nipigon Schreiber	91	-	-	Thunder Bay	19
Pinecrest Ave. Bridge No. 1	Steel plate girder	2 @ 105'	Ottawa Queensway	Unsurveyed Terr.	-	-	Carleton	9
Perrault Falls Culvert	Concrete rigid frame (Culvert type)	3 @ 20'	Hwy. 105	Unsurveyed Terr.	-	-	Kenora	20
Puslinch Twp. Bridge No. 9	Prestressed concrete beam	56'-9"/97' 97'/42'-6"	Hwy. 401 Toronto-Woodstock	Puslinch	30 31	VIII-IX	Wellington	1
Puslinch Twp. Bridge No. 11	Continuous concrete box girder	37'-6"/60'-3" 37' 6" 60'-3"	Hwy. 401 Toronto-Woodstock	Puslinch	25	VII	Wellington	1
Raisin River Bridge Eastbound Lane	Continuous concrete girder	55'/80'/55'	Hwy. 401, Johnston- Quebec B.	Charlotten- burg	K	I	Chengary	9
Richmond Rd. Underpass	Composite steel beam	2 @ 115'	Hwy. 15 Ottawa Limits	-	-	-	Carleton	9
Richmond Twp. Bridge No. 9 (Selby Creek)	Concrete rigid frame	52'	Hwy. 401 Napanee-Kingston	Richmond	22	III	Lennox & Addington	8
Richmond Twp. Bridge No. 12	Concrete box girder	114'-4"	Hwy. 401 Napanee-Newburg	Richmond	25	I	Lennox and Addington	8
Root River Bridge No. 1	Concrete rigid frame	50'	Hwy. 17 T.C.	Tarentoms	-	Sec. 17 18	Albion	18

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Root River Bridge No. 2	Concrete rigid frame	40'	Hwy. 17 T.C.	Tarentorus	...	Sec. 8	Algoma	18
Root River Bridge No. 3	Concrete rigid frame box (Culvert type)	2 @ 16'	Hwy. 17 T.C.	Awerees	...	Sec. 32	Algoma	18
Root River Bridge No. 4	Concrete rigid frame box (Culvert type)	2 @ 14'	Hwy. 17 T.C.	Awerees	...	Sec. 29 & 32	Algoma	18
Sand River Bridge	Continuous steel plate girder	60'/80'/60'	Hwy. 17 T.C. Wawa-Agawa	29	...	Range XVII	Algoma	15
Saugeen River Bridge	Simple steel girder	95'-8"/96'-4"/95'-8"	Hwy. 4 Hanover westerly	Brant	71-72	I	Bruce	5
Signet Culvert (Extension)	Concrete rigid frame	22'	Hwy. 5 Signet westerly	W. Luther	9	XIV	Wellington	5
Sixteen Mile Creek	Steel beam, concrete deck, timber substructure	19'	Hwy. 11 Mattice west	Devitt	12	V	Cochrane	16
Spanish River at Espanola	Steel deck truss	2 @ 50' / 2 @ 157'-6" / 1 @ 202'-6"	Hwy. 68 Espanola-Little Current	Merritt	8	VI	Sudbury	17
Stokes River Bridge	Concrete rigid frame	54'	Hwy. 6, Ferndale-Miller Lake	Lindsay	4	II	Bruce	5
Sydenham River Bridge	Continuous concrete girder, prestressed	66'/67'/66'	Hwy. 80, Walkers Crs.-Alvinston	Brooke	21-22	IV	Lambton	2
Thames River Bridge	Concrete rigid frame	45'	Hwy. 19 Shakespeare-Hickson	E. Zorra	34	XII	Oxford	3
Tilbury N. Twp. Bridge No. 1 (Queen St.)	Concrete rigid frame (Twin-structure)	54'	Highway 401 Windsor-Toronto	Tilbury N. & E.	22 & 17	III & IV	Essex and Kent	1
Tilbury E. Twp. Bridge No. 8 (Baptiste Creek)	Concrete rigid frame (Twin-structure)	50'	Hwy. 401 Windsor-Toronto	Tilbury E.	11	V	Kent	1
Tilbury E. Twp. Br. No. 11 (Little Baptiste Ck.)	Concrete rigid frame (Twin-structure)	35'	Hwy. 401 Windsor-Toronto	Tilbury E.	14-15	IV	Kent	1
Tyendinaga Twp. Br. No. 2 (Shannonville Rd.)	Concrete box girder prestressed	115'-11"	Hwy. 401 Belleville-Napanee	Tyendinaga	5-6	I	Hastings	8
Waterloo Twp. Br. No. 1	Continuous concrete box girder	38'-3"/70'-8"/70'-8"/38'-3"	Hwy. 401 Windsor-Toronto	Waterloo	6-7	IV	Waterloo	4
Waterloo Twp. Br. No. 2 (Back Hespeler Rd.)	Continuous concrete box girder	38'-3"/61'-3"/61'-3"/38'-3"	Hwy. 401 Windsor-Toronto	Waterloo	6	II-III B.L.B.	Waterloo	4

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	D.H.O. DISTRICT
Waterloo Twp. Br. No. 3 (Hwy. 24 Interchange)	Continuous concrete box girder	37'-4" / 69' / 69' / 37'-4"	Hwy. 401 Windsor-Toronto	Waterloo	7	II B.L.B.	Waterloo	4
Waterloo Twp. Br. No. 4 (C.N.R. Overhead)	Concrete rigid frame	33'	Hwy. 401 Windsor-Toronto	Waterloo	7	I	Waterloo	4
Waterloo Twp. Br. No. 4A (Gr. R.E. Rlwy.)	Concrete rigid frame	27'	Hwy. 401 Windsor-Toronto	Waterloo	7	I	Waterloo	1
Waterloo Twp. Br. No. 5 (Speed R. East Br.)	Continuous steel beam	35' / 50' / 35'	Hwy. 401 Windsor-Toronto	Waterloo	7	I	Waterloo	1
Waterloo Twp. Br. No. 5A (Speed R. West Br.)	Continuous steel beam	35' / 50' / 35'	Hwy. 401 Windsor-Toronto	Waterloo	7	I	Waterloo	4
Waterloo Twp. Br. No. 6 (Speedville Rd.)	Continuous concrete girder	38'-6" / 61'-6" / 61'-6" / 38'-6"	Hwy. 401 Windsor-Toronto	Waterloo	7-8	I B.B.F.	Waterloo	1
Waterloo Twp. Br. No. 8 (Gr. R.E. Rlwy.)	Concrete rigid frame	52'	Hwy. 401 Windsor-Toronto	Waterloo	25-26	B.B.F.	Waterloo	1
Waterloo Twp. Br. No. 9 (Breslau Rd.)	Continuous concrete girder	46' / 61' / 61' / 53'	Hwy. 401 Windsor-Toronto	Waterloo	24	B.B.F.	Waterloo	4
Waterloo Twp. Br. No. 10 (Hwy. 8 Interchange)	Continuous concrete beam	2 @ 59'-2"	Hwy. 401 Windsor-Toronto	Waterloo	24	B.B.F.	Waterloo	1
Waterloo Twp. Br. No. 12 (Grand River)	Steel plate girder (Twin-structure)	2 @ 129' / 4 @ 130'	Hwy. 401 Windsor-Toronto	Waterloo	7	B.B.F.	Waterloo	1
Waterloo Twp. Br. No. 14 (Blair Doon Rd.)	Concrete rigid frame	2 @ 66'	Hwy. 401 Eastwood-Preston	Waterloo	9	B.O.S.	Waterloo	2
Westmeath Twp., C.P.R. (Overhead)	Continuous concrete slab	16 @ 19' / 15 @ 22'-6" / 4 @ 16'-9"	Hwy. 17 Cobden-Pembroke	Westmeath	7-6	I-II	Renfrew	9
Whitby Twp. Br. No. 1 (Whitby-Pickering Townl. Rd.)	Simple concrete T-beam	2 @ 46'-3" / 5 @ 8'-4"	Hwy. 401 Toronto-Oshawa	Pickering-Whitby	1 & 35	I & I	Ontario	6
White Lake Narrows Bridge	Steel plate stabborn arch (Steel plate girder stiffened with a light arch)	90' / 275' / 90'	Hwy. 17 T.C. Marathon-White River	Unsurveyed Territory			Thunder Bay	15
White River East Bridge	Composite steel beam	35' / 50' / 35'	Hwy. 17 T.C. White River-Wawa	54			Algoma	15
Whitson Creek Bridge (Val Caron Bridge)	Concrete rigid frame	45'	Hwy. 69 Sudbury-Capreol	Bleazard	7	VI	Sudbury	17
Woodroffe Ave. Br. No. 2	Simple steel plate girder	2 @ 105'	Ottawa Queensway	.....			Carleton	9
Wright Creek Bridge	Steel low truss	25' / 100' / 25'	Hwy. 65 New Liskeard-Quebec B.	Casey	9	II	Timiskaming	14

APPENDIX No. 5

COUNTIES

Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
TOTALS TO DATE.....		\$448,865,301.26	\$231,813,620.73

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1960
Provincial Subsidies on 1960 Expenditures Being Paid in the 1960-61 Fiscal Year

COUNTY	YEAR OF ESTABLISH- MENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES TO END OF 1960	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB- URBAN ROADS	TOTAL		
Brant.....	1917	92.26	35.00	127.26	\$ 7,381,744.46	\$ 3,956,510.47
Bruce.....	1917	312.06	.....	312.06	10,794,423.56	5,713,144.48
Carleton.....	1910	162.57	109.07	271.64	20,051,566.75	10,415,643.06
Dufferin.....	1918	185.05	.....	185.05	4,821,100.76	2,432,657.84
Elgin.....	1917	252.30	27.80	280.10	10,506,155.48	5,465,763.01
Essex.....	1916	209.83	53.00	262.83	17,997,214.73	9,348,035.30
Frontenac.....	1907	121.90	43.60	165.50	5,147,769.43	2,619,351.38
Grey.....	1918	295.60	34.70	330.30	11,724,260.48	6,005,234.04
Haldimand.....	1912	163.64	.....	163.64	9,597,598.13	4,859,840.04
Halton.....	1907	148.47	.....	148.47	7,959,341.08	4,021,218.52
Hastings.....	1904	255.29	14.50	269.79	8,293,778.93	4,104,747.75
Huron.....	1917	390.80	.....	390.80	12,020,169.83	6,457,412.37
Kent.....	1917	383.58	24.35	407.93	18,320,592.51	9,803,577.39
Lambton.....	1918	259.95	25.46	285.41	12,124,886.11	6,377,965.21
Lanark.....	1903	233.78	6.00	239.78	7,115,528.65	3,621,302.90
Leeds and Grenville...	1910	311.78	37.70	349.48	9,914,341.33	4,936,859.83
Lennox and Addington	1906	177.06	.....	177.06	6,360,164.21	3,286,067.19
Lincoln.....	1904	153.39	23.55	176.94	11,496,236.61	5,707,056.99
Middlesex.....	1906	442.30	64.45	506.75	21,768,201.07	11,507,666.34
Norfolk.....	1917	247.16	.....	247.16	11,863,655.48	6,070,033.53
Northumberland and Durham.....	1918	286.95	12.75	299.70	10,983,776.12	5,681,023.58
Ontario.....	1918	243.15	21.70	264.85	9,702,367.91	5,055,747.41
Oxford.....	1904	200.75	15.50	216.25	11,743,890.78	5,986,774.65
Peel.....	1907	152.77	.....	152.77	15,249,440.68	8,039,601.21
Perth.....	1907	180.70	23.55	204.25	7,833,928.94	4,025,260.37
Peterborough.....	1919	130.30	70.00	200.30	6,122,877.65	3,284,647.63
Prescott and Russell..	1917	330.79	.....	330.79	12,258,104.94	6,182,490.78
Prince Edward.....	1907	187.83	.....	187.83	6,115,036.75	3,049,065.75
Renfrew.....	1918	222.97	.....	222.97	10,254,276.12	5,357,553.35
Simcoe.....	1903	241.30	19.10	260.40	12,792,919.42	6,419,539.80
Stormont, Dundas and Glengarry.....	1917	410.61	62.28	472.89	14,450,981.70	7,301,508.50
Victoria.....	1917	234.68	.....	234.68	7,254,836.20	3,764,826.24
Waterloo.....	1908	90.76	121.97	212.73	13,867,209.94	7,335,298.49
Welland.....	1912	152.55	31.30	183.85	15,286,145.86	7,838,204.13
Wellington.....	1903	354.55	36.00	390.55	15,633,929.74	8,204,521.07
Wentworth.....	1903	41.54	127.90	169.44	14,559,715.01	7,303,240.36
York.....	1911	.....	190.36	190.36	39,497,133.91	20,274,229.77
TOTALS.....		8,260.97	1,231.59	9,492.56	448,865,301.26	231,813,620.73

APPENDIX
SUMMARY OF COUNTY
 (Government Subsidies Paid)

NAME OF COUNTY	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 364,657.74	\$ 96,681.78	\$ 79,323.38	\$ 5,079.03
Bruce.....	252,321.16	149,618.19	191,713.87	8,381.81
Carleton.....	366,509.85	104,122.35	236,796.47	3,872.24
Carleton (Ottawa Sub.).....	462,475.39	101,265.02	35,152.02	5,534.78
Dufferin.....	226,551.53	90,000.00	26,420.21	5,864.30
Elgin.....	444,152.50	207,520.05	109,311.10	8,940.89
Essex.....	700,252.25	334,617.62	102,458.58	11,301.90
Frontenac.....	132,185.72	119,898.10	89,800.87	1,662.80
Grey.....	158,576.51	295,375.91	78,813.15	3,474.09
Haldimand.....	430,801.94	154,674.29	62,671.65	751.49
Halton.....	340,171.77	170,808.61	82,337.89	3,562.72
Hastings.....	111,896.70	196,596.40	29,058.11	5,541.05
Huron.....	450,864.32	139,847.64	223,039.09	2,788.59
Kent.....	676,179.50	219,058.45	472,823.75	5,696.85
Lambton.....	881,354.07	185,954.33	149,568.23	5,819.34
Lanark.....	189,321.38	125,283.63	22,077.31	2,209.95
Leeds and Grenville.....	160,000.00	210,321.58	130,715.77	8,265.16
Lennox and Addington.....	90,078.35	109,620.78	50,496.48	3,349.79
Lincoln.....	555,319.23	208,872.09	60,867.91	5,028.04
Middlesex.....	1,281,382.93	418,519.64	538,498.50	9,195.91
Norfolk.....	555,199.01	287,882.28	63,442.30	2,337.98
Northumberland and Durham	599,749.85	134,357.80	85,563.69	1,564.08
Ontario.....	564,216.90	199,344.50	159,336.95	15,869.56
Oxford.....	433,836.97	209,595.01	237,704.99	15,030.25
Peel.....	1,419,756.91	270,540.53	391,239.70	1,668.49
Perth.....	313,386.99	142,451.80	88,794.76	2,255.05
Peterborough.....	226,404.83	126,231.48	74,570.29	6,897.72
Prescott and Russell.....	266,400.14	196,699.80	148,257.90	10,000.00
Prince Edward.....	151,682.28	138,710.35	52,544.95	183.62
Renfrew.....	208,328.75	161,415.80	95,995.57	7,003.56
Simcoe.....	348,411.81	302,478.85	33,591.87	2,111.78
Storront, Dundas and Glengarry.....	289,268.95	201,643.16	7,774.48	14,646.49
Victoria.....	214,909.95	147,128.10	46,070.65	2,657.79
Waterloo.....	540,816.16	175,610.30	358,619.35	9,646.54
Welland.....	745,877.82	238,236.65	58,325.02	7,755.69
Wellington.....	383,898.18	366,686.29	56,280.14	3,731.51
Wentworth.....	201,791.62	301,611.93	6,802.50	12,588.92
York.....	1,027,560.52	189,844.12	255,513.91	12,121.23
TOTALS.....	\$16,766,550.48	\$ 7,429,125.21	\$ 4,992,373.36	\$ 234,390.99

SUMMARY OF METROPOLITAN

Metropolitan Toronto.....	\$19,876,223.84	\$ 1,577,279.50	\$ 3,047,077.57	\$ 151,446.33
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No. 7

ROAD EXPENDITURES—1960

in 1960-1961 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	APPROVED EXPENDITURE			GOVERNMENT SUBSIDY 50% AND 80%
	CONSTRUCTION	MAINTENANCE	TOTAL	
\$ 24,605.18	\$ 443,981.12	\$ 126,365.99	\$ 570,347.11	\$ 310,494.28
80,000.00	444,035.03	238,000.00	682,035.03	401,046.22
35,894.30	603,306.32	143,888.89	747,195.21	445,798.22
78,798.00	497,627.41	185,597.80	683,225.21	353,818.65
72,000.00	252,971.74	167,864.30	420,836.04	220,103.37
22,770.80	553,463.60	239,231.74	792,695.34	431,823.27
30,637.23	802,710.83	376,556.75	1,179,267.58	623,761.93
51,039.98	221,986.59	172,600.88	394,587.47	224,732.84
119,000.00	237,389.66	417,850.00	655,239.66	352,306.00
7,869.79	493,473.59	163,295.57	656,769.16	347,411.52
66,593.51	422,509.66	240,964.84	663,474.50	357,507.43
55,279.10	140,954.81	257,416.55	398,371.36	209,565.43
106,561.89	673,903.41	249,198.12	923,101.53	529,299.06
12,043.30	1,149,003.25	236,798.60	1,385,801.85	836,457.11
29,347.69	1,030,922.30	221,121.36	1,252,043.66	672,638.10
49,106.82	211,398.69	176,600.40	387,999.09	201,285.73
45,390.49	290,715.77	263,977.23	554,693.00	319,040.78
36,418.28	140,574.83	149,388.85	289,963.68	161,135.72
60,958.00	616,187.14	274,858.13	891,045.27	465,291.43
72,677.36	1,819,881.43	500,392.91	2,320,274.34	1,324,445.49
46,289.25	618,641.31	336,509.51	955,150.82	497,309.49
103,568.78	685,313.54	239,490.66	924,804.20	488,540.43
107,366.86	723,553.85	322,580.92	1,046,134.77	575,629.34
52,472.95	671,541.96	277,098.21	948,640.17	550,140.66
77,190.27	1,810,996.61	349,399.29	2,160,395.90	1,980,070.41
23,824.86	402,181.75	168,531.71	570,713.46	312,671.67
54,496.57	300,975.12	187,625.77	488,600.89	268,740.85
79,401.94	414,658.04	286,101.74	700,759.78	397,857.26
30,675.37	204,227.23	169,569.34	373,796.57	202,716.85
40,138.88	304,324.32	208,558.24	512,882.56	287,341.02
121,813.95	382,003.68	426,404.58	808,408.26	414,915.22
95,253.94	297,043.43	311,543.59	608,587.02	311,019.80
57,835.78	260,980.60	207,621.67	468,602.27	248,919.67
80,105.14	899,435.51	265,361.98	1,164,797.49	692,878.50
120,054.16	804,202.84	366,046.50	1,170,249.34	604,948.88
165,785.77	440,178.32	536,203.57	976,381.89	506,194.44
135,295.59	208,594.12	449,496.44	658,090.56	334,862.71
219,730.05	1,283,074.43	421,695.40	1,704,769.83	932,675.45
\$2,668,291.83	\$21,758,923.84	\$10,331,808.03	\$32,090,731.87	\$17,613,395.23

ROAD EXPENDITURES—1960

\$1,697,468.30	\$22,923,301.41	\$3,426,194.13	\$26,349,495.54	\$13,174,747.77
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APPENDIX No. 8
INCORPORATED TOWNSHIPS
Chronological Summary of Road Expenditure and Provincial Subsidy
Including Improvement Districts and Indian Reserves

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
TOTALS.....		\$474,939,595.22	\$250,357,721.53

NOTE. — 575 Townships, 19 Improvement Districts and 31 Indian Reserves are represented in the above expenditures for 1960.

APPENDIX No. 9
CITIES, TOWNS AND VILLAGES
Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
TOTALS.....		\$275,381,708.57	\$108,002,316.48

NOTE. — 30 Cities, 8 Separated Towns, 153 Towns, and 150 Villages are represented in the above expenditure for 1960.

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1960
ROADS UNDER LOCAL AUTHORITY

COUNTY	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT CONCRETE BRICK ETC.	TOTAL
Brant.....	1.00	37.61	75.81	24.20	24.56	16.09	179.27
Bruce.....	8.05	55.24	49.71	14.35	18.58	1.94	147.87
Carleton.....	24.67	93.45	61.75	129.54	199.04	.....	508.45
Dufferin.....	1.50	18.73	5.70	.....	11.43	0.70	38.06
Elgin.....	1.50	10.12	28.92	25.93	27.24	2.91	96.62
Essex.....	28.39	60.13	29.73	41.83	183.44	149.37	492.89
Frontenac.....	0.82	.....	17.89	16.13	54.99	0.30	90.13
Grey.....	29.69	42.19	69.87	13.20	10.42	8.38	173.75
Haldimand.....	4.97	18.45	4.47	10.70	17.08	0.34	56.01
Halton.....	.....	149.22	79.91	23.60	50.43	5.34	308.50
Hastings.....	9.90	20.29	55.60	7.80	12.21	0.13	105.93
Huron.....	1.62	33.21	20.88	38.26	20.35	3.50	117.82
Kent.....	10.54	34.09	34.37	9.96	86.67	18.37	194.00
Lambton.....	3.82	46.67	103.63	32.27	49.88	8.30	244.57
Lanark.....	9.97	17.79	16.10	26.47	32.20	1.00	103.53
Lennox-Addington..	.....	9.57	13.51	.....	3.29	.....	26.37
Leeds and Grenville	16.68	20.11	7.28	28.43	25.17	23.45	121.12
Lincoln.....	8.28	27.29	12.59	32.49	46.23	48.92	175.80
Middlesex.....	4.64	39.80	110.59	64.64	6.18	7.10	232.95
Norfolk.....	2.03	14.47	28.00	23.37	4.00	1.70	73.57
Northumberland and Durham.....	4.25	64.40	54.75	23.50	44.16	5.00	196.06
Ontario.....	12.64	23.01	91.29	67.17	71.03	10.68	275.82
Oxford.....	4.50	22.70	38.16	58.89	11.29	11.96	147.50
Peel.....	.....	21.19	7.46	32.10	26.20	.....	86.95
Perth.....	17.21	66.79	3.90	30.25	33.39	3.01	154.55
Peterborough.....	.....	25.32	51.09	13.00	32.69	4.37	126.47
Prescott and Russell	3.14	5.98	7.00	6.18	9.37	0.50	32.17
Prince Edward.....	.....	0.21	8.91	2.87	8.36	.....	20.35
Renfrew.....	18.85	20.48	25.45	8.05	46.51	0.15	119.49
Simcoe.....	19.74	146.92	39.58	3.41	58.74	6.93	275.32
Stormont, Dundas and Glengarry.....	45.55	3.55	7.64	40.79	0.30	50.30	148.13
Victoria.....	.....	14.00	36.10	3.10	26.75	.....	79.95
Waterloo.....	33.15	64.19	101.19	99.01	145.39	19.85	462.78
Welland.....	7.92	13.20	51.87	67.88	90.59	8.23	239.69
Wellington.....	10.68	29.59	90.71	27.36	30.59	28.04	216.97
Wentworth.....	4.25	72.54	41.24	119.92	279.05	3.12	520.12
York.....	1.70	47.06	14.30	0.58	41.24	.....	104.88
TOTALS—Counties	351.65	1,389.56	1,496.95	1,167.23	1,839.04	449.98	6,694.41
Metro. Toronto Area	6.14	1.56	8.63	5.90	567.14	25.53	614.90
DISTRICTS							
Algoma.....	24.95	71.38	1.60	11.02	54.90	4.10	167.95
Cochrane.....	.....	24.15	22.00	25.82	23.52	1.80	97.29
Kenora.....	9.31	33.67	12.70	0.25	24.29	.....	80.22
Manitowlin.....	5.50	12.20	1.60	1.70	.....	.....	21.00
Muskoka.....	2.88	51.54	27.37	24.12	1.50	3.75	111.16
Nipissing.....	6.45	33.51	26.40	5.48	44.19	1.50	117.53
Parry Sound.....	.....	36.87	4.00	10.50	12.06	.....	63.43
Rainy River.....	5.64	28.45	8.06	2.72	4.19	1.78	50.84
Sudbury.....	11.15	54.96	38.96	52.99	97.68	3.91	259.65
Temiskaming.....	.....	23.25	14.50	14.25	13.75	.....	65.75
Thunder Bay.....	1.60	58.28	75.18	9.68	80.29	9.60	234.63
TOTALS—Districts	61.98	416.06	230.77	156.83	356.37	26.44	1,248.45
GRAND TOTALS	419.77	1,807.18	1,736.35	1,329.96	2,762.55	501.95	8,557.76

APPENDIX

MILEAGE OF ROAD SURFACES

COUNTY	COUNTY ROADS				
	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE
Brant.....		30.97	1.83	94.46	
Bruce.....		149.47		113.84	48.10
Carleton.....		55.24	55.12	36.43	124.85
Dufferin.....		158.50		8.15	18.20
Elgin.....		101.65	11.10	153.00	13.85
Essex.....		83.03	48.58	48.63	67.62
Frontenac.....		78.75	71.75	15.00	
Grey.....		286.35		43.95	
Haldimand.....		48.16	110.23		5.25
Halton.....		53.65	46.15	7.55	40.12
Hastings.....		177.17	50.75	16.35	23.22
Huron.....		212.15		160.95	17.70
Kent.....		76.70		3.19	320.37
Lambton.....	0.67	142.10		55.01	86.23
Lanark.....		150.05	3.40	70.08	16.25
Lennox and Addington.....		37.91	61.95	17.00	60.20
Leeds and Grenville.....		150.10	9.40	123.74	65.04
Lincoln.....		21.76	66.22	63.22	22.30
Middlesex.....		199.50	4.00	230.30	50.30
Norfolk.....		9.26		237.09	
Northumberland and Durham.....		182.55	2.05	63.90	50.60
Ontario.....		88.18	24.02	106.80	43.04
Oxford.....		78.65		125.80	
Peel.....		41.47	28.73	11.28	67.06
Perth.....		87.05		104.60	12.60
Peterborough.....		148.70		45.30	6.30
Prescott and Russell.....	3.88	190.19	40.99	49.49	46.24
Prince Edward.....		92.53	33.87	45.48	7.35
Renfrew.....		69.16		90.86	61.60
Simcoe.....		169.49	3.80	25.05	62.06
Stormont, Dundas and Glengarry.....		144.99	0.90	217.77	108.63
Victoria.....		124.30		100.03	10.35
Waterloo.....		46.60		134.70	7.03
Welland.....		12.95	74.30	35.20	61.40
Wellington.....		164.40	2.00	194.35	29.80
Wentworth.....		5.10	49.87	113.17	1.30
York.....		26.19	21.72	51.98	90.47
TOTALS — Counties.....	4.55	3,894.97	822.73	3,013.70	1,645.43
Metropolitan Toronto Area.....	2.60	3.50	9.88	METROPOLITAN 283.27	
DISTRICTS					
Algoma.....					
Cochrane.....					
Haliburton.....					
Kenora.....					
Manitoulin.....					
Muskoka.....					
Nipissing.....					
Parry Sound.....					
Rainy River.....					
Sudbury.....					
Temiskaming.....					
Thunder Bay.....					
TOTALS — Districts.....					
Unorganized Townships.....					
GRAND TOTALS.....	7.15	3,898.47	832.61	3,013.70	1,928.70

No. 11

AT THE END OF 1960

ORGANIZED TOWNSHIP ROADS

CEMENT, CON- CRETE	TOTAL	EARTH	GRAVEL OR STONE	SURFACE TREATED GRAVEL OR STONE	LOW-COST BITUMI- NOUS SURFACES	MIX. MAC. OR ASPHALTIC CONCRETE	CEMENT, CON- CRETE	TOTAL
.....	127.26	36.70	465.06	30.70	8.75	.....	.....	541.21
.65	312.06	82.00	1,790.25	25.25	7.75	2.00	.....	1,907.25
.....	271.64	123.08	876.25	19.40	19.05	29.52	.....	1,067.30
0.20	185.05	57.25	710.00	1.75	.....	.....	.....	769.00
.50	280.10	38.90	829.40	15.00	.....	.10	.....	883.40
14.97	262.83	60.43	870.01	108.73	7.45	46.61	35.59	1,128.82
.....	165.50	309.85	605.03	9.20	7.70	2.30	.....	934.08
.....	330.30	104.75	2,011.00	23.25	6.00	2.20	.....	2,147.20
.....	163.64	60.90	487.75	60.72	4.60	6.75	.....	620.72
1.00	148.47	3.50	316.99	90.29	.....	15.86	.....	426.64
2.30	269.79	313.63	1,184.70	11.60	5.00	2.66	.....	1,517.59
.....	390.80	40.65	1,496.80	5.50	12.80	6.05	.....	1,561.80
7.67	407.93	29.20	1,215.90	.....	0.40	8.03	0.65	1,254.18
1.40	285.41	167.71	1,181.82	7.70	41.34	0.98	.....	1,399.55
.....	239.78	469.02	547.64	.....	7.20	.....	.....	1,023.86
.....	177.06	230.70	406.36	10.45	.....	0.54	.....	648.05
1.20	349.48	497.25	766.19	.....	35.05	26.75	.....	1,325.24
3.44	176.94	92.06	414.36	63.78	39.65	11.99	4.12	625.96
22.65	506.75	51.50	1,508.80	87.90	14.80	3.20	.20	1,666.40
.81	247.16	71.90	722.10	11.40	120.30	1.20	.....	926.90
0.60	299.70	274.00	1,819.10	79.00	96.10	3.25	0.25	2,271.70
2.81	264.85	182.20	849.49	20.00	19.36	22.45	.....	1,093.50
11.80	216.25	5.50	976.50	19.70	12.60	14.60	.....	1,028.90
4.23	152.77	49.27	534.82	113.31	.....	46.51	.....	743.91
.....	204.25	24.70	1,025.75	3.25	.....	1.35	.....	1,055.05
.....	200.30	160.00	899.70	37.50	2.00	2.00	0.50	1,101.70
.....	330.79	386.67	668.89	1.10	3.61	.....	.....	1,060.27
8.60	187.83	26.60	332.70	49.00	6.00	.....	1.94	416.24
1.35	222.97	1,009.19	673.26	1.50	3.30	7.65	.....	1,694.90
.....	260.40	269.28	1,821.47	26.55	1.80	39.10	.....	2,158.20
0.60	472.89	241.51	1,120.54	2.45	14.49	4.35	.....	1,383.34
.....	234.68	167.30	744.10	.....	.....	.....	.....	911.40
24.40	212.73	8.45	573.00	17.40	3.75	3.00	1.50	607.10
.....	183.85	247.91	441.39	225.03	49.84	14.65	3.84	982.66
.....	390.55	65.20	1,152.95	2.00	1.80	5.50	0.60	1,228.05
.....	169.44	22.35	469.31	47.11	14.22	.....	.....	552.99
.....	190.36	33.85	833.16	15.50	15.60	58.16	.....	956.27
111.18 ROADS	9,492.56	6,014.96	33,342.54	1,243.02	582.31	389.31	49.19	41,621.33
4.04	303.29	77.55	186.24	448.87	10.82	704.17	6.93	1,434.58
.....	.....	171.50	554.10	.....	6.00	19.82	.....	751.42
.....	.....	81.00	554.87	8.00	13.50	4.00	.....	661.37
.....	.....	192.35	231.00	.....	36.00	.....	.....	459.35
.....	.....	28.00	205.75	4.00	.....	.....	.....	237.75
.....	.....	67.11	449.52	6.00	1.40	.....	.....	524.03
.....	.....	300.80	459.59	.....	89.01	.....	.....	849.40
.....	.....	103.70	561.34	.....	21.15	8.00	.....	694.19
.....	.....	82.30	876.00	1.50	41.50	.....	.....	1,001.30
.....	.....	69.85	507.65	.....	0.90	.....	.....	578.40
.....	.....	103.91	570.88	10.97	14.92	18.47	.....	719.15
.....	.....	84.10	533.05	2.00	21.00	.....	.....	640.15
.....	.....	55.50	620.66	33.02	60.62	19.93	0.35	790.08
.....	.....	1,340.12	6,124.41	65.49	306.00	70.22	0.35	7,906.59
.....	.....	1,166.45	3,478.30	0.75	3.70	.....	.....	4,649.20
115.22	9,795.85	8,599.08	43,131.49	1,758.13	902.83	1,163.70	56.47	55,611.70

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1960

Approved 1960 Expenditures by Cities, Towns and Villages under Part X of the Highway Improvement Act

MUNICIPAL ROAD DISTRICT No.	CITIES (30) SEP. TOWNS (8)	APPROVED EXPENDITURES—1960			GOVERNMENT SUBSIDY 33 1/3%, 50% AND 80%
		TOWNS (153)	VILLAGES (150)	URBAN TOTAL (341)	
1	\$ 1,906,086.53	\$ 457,867.07	\$ 82,628.73	\$ 2,446,582.33	\$ 916,783.24
2	1,429,120.00	488,856.62	87,910.74	2,005,887.36	795,278.08
3	2,326,881.76	496,063.83	141,192.97	2,964,138.56	1,122,802.98
4	5,978,280.54	996,728.79	110,817.72	7,085,827.05	2,603,540.90
5	191,212.63	220,680.34	90,992.70	502,885.67	228,600.51
6	438,300.00	2,111,101.72	271,899.03	2,821,300.75	1,403,620.13
6M.T.A.	3,839,963.36	500,043.71	166,135.00	4,506,142.07	1,669,887.37
7	691,261.46	338,120.56	93,442.98	1,122,825.00	452,344.63
8	885,490.29	43,329.70	107,245.29	1,036,065.28	394,857.29
9	4,298,501.69	217,618.58	106,744.43	4,622,864.70	1,596,092.43
10	.....	320,357.68	74,809.57	395,167.25	209,032.71
11	1,417,167.42	399,252.22	151,494.68	1,967,914.32	774,095.45
12	.....	63,241.53	46,606.79	109,848.32	60,897.36
13	173,436.68	126,065.53	10,000.00	309,502.21	127,882.55
14	.....	434,829.68	2,089.12	436,918.80	220,717.97
16	.....	147,885.35	.....	147,885.35	75,219.24
17	1,772,471.14	349,127.66	.....	2,121,598.80	954,902.11
18	1,001,108.42	73,565.26	4,770.89	1,079,444.57	374,335.81
19	678,702.33	27,000.00	.....	705,702.33	238,742.18
20	.....	511,261.30	.....	511,261.30	286,439.72
TOTALS.....	\$27,027,984.25	\$ 8,322,997.13	\$ 1,548,780.64	\$36,899,762.02	\$14,506,072.66

APPENDIX No. 13

TYPES OF SURFACES ON THE KING'S HIGHWAYS

As of March 31, 1961

COUNTY OR DISTRICT	CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Algoma.....	26.3	262.7	142.7	44.0	475.7
Brant.....	16.3	49.7	16.7	.....	82.7
Bruce.....	10.8	109.7	25.8	21.8	168.1
Carleton.....	4.5	135.9	.....	3.8	144.2
Cochrane.....	.....	256.0	78.8	79.0	413.8
Dufferin.....	8.8	52.0	1.0	0.5	62.3
Elgin.....	13.1	95.4	2.9	3.4	114.8
Essex.....	48.7	139.9	18.7	.....	207.3
Frontenac.....	.....	120.1	47.4	4.9	172.4
Grey.....	4.9	129.2	.....	10.5	144.6
Haldimand.....	.....	66.0	10.3	.....	76.3
Haliburton.....	.....	54.3	56.5	4.3	115.1
Halton.....	16.8	83.5	.....	4.5	104.8
Hastings.....	.....	123.7	120.4	.....	244.1
Huron.....	9.2	180.5	13.7	.....	203.4
Kenora.....	.....	234.8	161.2	116.4	512.4
Kent.....	16.2	152.2	.....	6.1	174.5
Lambton.....	30.5	113.1	8.8	2.1	154.5
Lanark.....	.....	93.5	.....	4.7	98.2
Leeds and Grenville.....	24.7	212.6	.....	.....	237.3
Lennox and Addington.....	.....	59.5	29.8	12.5	101.8
Lincoln.....	1.3	58.3	18.8	.....	78.4
Manitoulin.....	.....	4.4	24.3	31.3	60.0
Middlesex.....	8.1	196.0	24.9	17.3	246.3
Muskoka.....	.....	125.5	63.1	.....	188.6
Nipissing.....	9.7	173.5	132.6	56.6	372.4
Norfolk.....	3.5	53.6	6.2	.....	63.3
Northumberland and Durham.....	.....	222.4	14.7	23.2	260.3
Ontario.....	21.6	110.7	17.1	2.6	152.0
Oxford.....	8.3	103.2	0.4	19.3	131.2
Parry Sound.....	.....	124.7	42.8	27.5	195.0
Peel.....	11.1	87.9	12.3	13.5	124.8
Perth.....	.....	114.4	12.6	4.3	131.3
Peterborough.....	6.5	58.4	22.1	25.5	112.5
Prescott and Russell.....	.....	104.0	.....	.....	104.0
Prince Edward.....	.....	41.7	17.7	.....	59.4
Rainy River.....	.....	82.4	51.6	.....	134.0
Renfrew.....	0.6	171.3	102.3	10.0	284.2
Simcoe.....	5.4	300.8	7.9	5.6	319.7
Stormont, Dundas and Glengarry.....	.....	161.6	.....	.....	161.6
Sudbury.....	2.0	136.3	36.3	148.8	323.4
Temiskaming.....	.....	126.5	99.9	38.5	264.9
Thunder Bay.....	.....	537.8	22.9	81.0	641.7
Victoria.....	.....	103.3	43.1	11.7	158.1
Waterloo.....	11.2	56.3	2.0	9.5	79.0
Welland.....	24.7	69.7	18.7	.....	113.1
Wellington.....	9.9	123.2	11.0	3.1	147.2
Wentworth.....	2.2	124.1	35.3	.....	161.6
York.....	0.9	155.5	41.1	1.5	199.0
TOTALS.....	357.8	6,451.8	1,616.4	849.3	9,275.3

APPENDIX No. 13A**SUMMARY OF KING'S HIGHWAY MILEAGES
BY HIGHWAY DISTRICTS**

As of March 31, 1961

DISTRICT	CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Chatham.....	95.4	405.2	27.5	6.1	534.2
London.....	58.5	444.7	10.1	21.3	534.6
Stratford.....	21.3	487.0	39.7	44.0	592.0
Hamilton.....	41.9	433.8	106.0	10.2	591.9
Owen Sound.....	24.8	420.6	27.6	37.5	510.5
Toronto.....	31.7	374.6	76.5	2.4	485.2
Port Hope.....	16.4	493.5	76.6	63.0	649.5
Kingston.....	24.7	491.9	98.4	10.9	625.9
Ottawa.....	5.1	551.0	.....	8.5	564.6
Bancroft.....	.....	77.5	292.1	29.8	399.4
Huntsville.....	.....	324.9	154.7	25.3	504.9
North Bay.....	9.7	298.9	91.4	67.8	467.8
New Liskeard.....	.....	192.7	154.7	95.2	442.6
Cochrane.....	.....	238.2	24.0	56.7	318.9
Sudbury.....	6.3	207.4	58.7	87.8	360.2
Sault Ste. Marie.....	22.0	251.1	142.7	85.4	501.2
Port William.....	.....	482.9	22.9	81.0	586.8
Kenora.....	.....	275.9	212.8	116.4	605.1
TOTALS.....	357.8	6,451.8	1,616.4	849.3	9,275.3

APPENDIX No. 13B**TYPES OF SURFACES ON SECONDARY HIGHWAYS**

As of March 31, 1961

COUNTY OR DISTRICT	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL	TOTAL
Frontenac.....	.....	6.3	28.9	35.2
Hastings.....	.....	14.4	41.1	55.5
Lanark.....	.....	.....	14.0	14.0
Lennox and Addington.....	0.8	5.4	.....	6.2
Ontario.....	.....	.....	7.1	7.1
Peterborough.....	.....	6.7	51.3	58.0
Renfrew.....	17.0	28.0	61.4	106.4
Victoria.....	.....	16.6	43.0	59.6
Algoma.....	.....	41.8	255.7	297.5
Cochrane.....	1.3	39.0	125.3	165.6
Haliburton.....	2.8	53.6	41.4	97.8
Kenora.....	.....	5.5	164.1	169.6
Manitoulin.....	.....	40.4	102.7	143.1
Muskoka.....	7.9	68.2	18.9	95.0
Nipissing.....	.....	5.6	66.0	71.6
Parry Sound.....	0.4	79.3	116.7	196.4
Rainy River.....	.....	5.3	188.4	193.7
Sudbury.....	41.0	24.5	194.9	260.4
Temiskaming.....	2.4	18.8	174.4	195.6
Thunder Bay.....	11.3	7.7	371.7	390.7
TOTALS.....	84.9	467.1	2,067.0	2,619.0

APPENDIX No. 13C

SUMMARY OF SECONDARY HIGHWAY MILEAGES
BY HIGHWAY DISTRICTS

As of March 31, 1961

DISTRICT	HIGH COST	LOW COST	GRAVEL	TOTAL
	BITUMINOUS	BITUMINOUS		
Port Hope.....	.....	17.2	67.0	84.2
Kingston.....	0.8	14.2	6.8	21.8
Ottawa.....	17.0	.....	27.5	44.5
Bancroft.....	.....	41.0	143.2	184.2
Huntsville.....	10.7	178.8	129.5	319.0
North Bay.....	0.4	35.6	145.8	181.8
New Liskeard.....	3.7	54.7	297.4	355.8
Cochrane.....	.....	3.1	140.2	143.3
Sudbury.....	41.0	62.2	260.6	363.8
Sault Ste. Marie.....	5.2	41.8	181.9	228.9
Fort William.....	6.1	13.0	352.9	372.0
Kenora.....	.....	5.5	314.2	319.7
TOTALS.....	84.9	467.1	2,067.0	2,619.0

APPENDIX No. 13D

ROAD MILEAGES IN ONTARIO

As of March 31, 1961

	TOTAL MILES	TYPE OF PAVEMENT			
		CONCRETE	HIGH COST BITUMINOUS	LOW COST BITUMINOUS	GRAVEL
King's Highway.....	9,275.3	357.8	6,451.8	1,616.4	849.3
Secondary Highways.....	2,619.0	.....	84.9	467.1	2,067.0
TOTAL PROVINCIAL HIGHWAYS.....	11,894.3	357.8	6,536.7	2,083.5	2,916.3

APPENDIX No. 14 DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1960 (Authorized by Part XI of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1960-61
34R	Dillon Cove Road	10.0	Carling	Parry Sound	\$ 5,813.05
91R	Fifth Line Road	7.8	Nipissing	Parry Sound	16,758.27
93R	Athens-Charleston	5.0	County	Leeds and Grenville	21,705.79
106R	Church Line Road	20.0	Galway and Cavendish	Peterborough	4,973.29
121R	Booth Track Road	4.7	Perris East and Himsworth North	Parry Sound	2,668.83
148	Winchester westerly	County	County	Stormont, Dundas and Glengarry	1,570.10 Cr.
153R	Maynard-South Augusta Road	6.0	Augusta	Leeds and Grenville	13,823.19
170	Perth Road	17.6	County	Frontenac	66,266.54
177	Hardwood Lake Road	11.0	Raglan	Renfrew	9,696.69
178R	French Line Road	5.0	Darling	Lanark	9,714.18
192	Maberley-Bolinbrooke	8.5	Sherbrooke South	Lanark	1,752.00
202R	Champlain Road	4.0	Tiny	Simcoe	39,141.96
206R	Sixth Sideroad	9.25	Brethour	Temiskaming	7,854.46
208R	Long Point Park Commission	2.6	Long Point Park Commission	Norfolk	246.74
231R	Assignack-Sheguandah Bidwell	20.0	Howland and Assignack	Sudbury	44,282.68
232R	Concession V/V I Road	2.0	Harley	Temiskaming	11,991.88
274	Foxboro Road (part)	2.7	County	Hastings	4,790.36
278	Houghton Bay Road	4.8	Bastard and Burgess South	Leeds and Grenville	2,981.46
285	Escott-Rockport	5.7	Escott Front	Leeds and Grenville	1,993.15
287	Nepean Swamp Road	5.9	Nepean	Carleton	19,790.04
289	Mass Road-County Road No. 8 (part)	12.2	County	Frontenac	63,843.76
290	Highway 43-Maxville	County	County	Stormont, Dundas and Glengarry	948.00 Cr.
313	Kelly's Corners-Cobden	7.5	County	Renfrew	37,841.97
323	Centre Line Road	4.0	Plummer Add'l	Algoma	20,967.55
336	Lanark Elphin	12.0	County	Lanark	78,026.40
349	Highgate-Highway 3	4.5	County	Kent	40,008.99
361	Athens-Mallorytown	3.0	County	Leeds and Grenville	55,679.90
364	Westport-Bedford Mills Co. Rd. 11 (part)	5.3	County	Leeds and Grenville	63,477.39
371	Flowerdale	6.8	Lavant	Lanark	4,887.79
379	County Road No. 16	County	County	Stormont, Dundas and Glengarry	757.20 Cr.
381R	Long Lake Road	5.0	Waters	Sudbury	9,969.15
382	Playfair Loop Road	6.0	Bayham	Cochrane	1,371.63
384	Alton-Griffins Corners	4.1	County	Elgin	142,143.37
385	Mt. Forest-Sheburne	25.8	Counties East	Grey, Dufferin and Wellington	406,770.53
386	Poydon-Redville	3.5	County	Lennox and Addington	14,975.67
392	Manitou Centreville	7.0	County	Lennox and Addington	25,180.14
404	Manitou Sideroad	4.5	Goulburn	Carleton	15,834.94
405	Comber-Kenners Torbolton	County	County	Carleton	154.00 Cr.
406	North River Road	6.5	North Gower	Carleton	6,810.22
409	Roseau-Hillsville	9.5	Carleton	Muskoka	44,819.28
410	Lanark-Dalbousie	2.0	Dalbousie-Sherbrooke North	Lanark	7,777.28
411	Winchester-Melvin	7.5	Winchester	Stormont, Dundas and Glengarry	5,856.19
416	Snow Road-Omph	9.5	Palmerston	Frontenac	40,569.73
446	Halloway By-pass	6	County	Hastings	18,910.21
423	Chisholm-River Road	11.1	County	Hastings	222,691.41
435	Chisholm-East Ferris Boundary	9.5	Chisholm	Nipissing	14,987.60
445	Concession III and IV Pittsburgh Road	5.8	Pittsburgh-Leeds and Lansdowne Front	Frontenac-Leeds and Grenville	15,000.00

449	Kemptville E'ly Co. Road No. 24	4.2	County	Leeds and Grenville	29,293.71
450	Lilly's Corners Lynnhurst	4.8	County	Leeds and Grenville	28,999.83
452	Vankleek Hill westerly	7.3	County	Frontenac	92,362.52
453	Sydenham-Otter Lake	45.3	Loughborough	Haliburton	19,570.09
456	Fourth Line Road	1.0	Tarentorus	Haliburton	43,475.56
457	Kushog Lake Road	6.5	County	Hastings	37,544.22
460	Ridge Road	5.0	County	Hastings	28,018.62
461	Courtland Port Rowan	19.0	County	Norfolk	58,974.45
463	Bird's Creek-Baptiste	5.5	Herschel	Hastings	14,938.57
467	Brackenrig Road	6.0	Watt	Norfolk	34,942.24
471	Alvinston Courtright	30.7	County	Lambton	630,161.98
478	Bay Road	5.1	South Elmsley	Leeds and Grenville	12,080.20
479	Crow Lake Road	4.0	Oso	Frontenac	29,568.27
481	North Line Road	5	Korah	Algonia	24,405.51
482	Pictou Black River	7.7	County	Prince Edward	107,704.54
484	Rose Corners St. Isidore	5.0	County	Prescott and Russell	1,849.80
486	Relessey Road	3.0	Mono	Durham	10,344.27
488	Black Donald Matawatchan	3.8	Brougham	Renfrew	30,010.04
489	Pitzroy-Torbolton	15.8	Pitzroy-Torbolton	Carleton	452,793.31
491	Fisherton-Singhampton	1.5	County	Haldimand	5,500.68
492	Old Indian Road	1.7	West Ferris	Nipissing	1,558.43
493	Burth's Road	3.7	Bancroft	Hastings	4,443.85
494	Parry-Centerville-Bell Rapids	11.0	County	Northumberland and Durham	195,181.18
495	Marion-Cutts-Corners	7.2	County	Northumberland and Durham	252,002.45
496	Kendall-Carleton Hill	3	County	Sudbury	114,441.11
498	Sandhill-Carleton Hill	14.5	Salter, May, Harrow, Town of Massey	Huron	195,505.33
499	Dunlop-Blyth Road	6.5	County	Haliburton	39,999.62
500	Hesshoe Lake Road	3.7	County	Middlesex	12,339.11
502	Highway 7 Chanteloye	4.0	County	Lanark	15,600.00
503	Merrywood Road	6.0	Smith	Peterborough	40,524.37
506	Ketchawano Lake Road	3.8	Osgoode	Carleton	2,724.48
511	Heeler's Corners Gloucester	3.0	County	Lennox and Addington	56,171.15
513	Kiosk Road	7.0	Calvin	Nipissing	19,607.04
517	Pulzeon Lake Road	14.5	County	Victoria	42,833.36
518	Bannockburn-Cooper	4.5	Madoc	Hastings	20,512.85
519	Fourth Line Road	5.7	Albion	Hastings	39,938.40
521	15th Sideroad	9.5	Flos	Peel	32,269.26
523	Bar River Road	2.0	Land and McDonald	Simcoe	26,353.59
524	McNath Road Clontarf	8.0	Gratton and Sebastopol	Algonia	27,682.47
526	County Road No. 26	11.5	County	Renfrew	138,400.25
528	Sulphide-Tweed	5.3	Mountain	Carleton	92,197.19
529	Hallville-Reids Mill	3.5	County	Hastings	14,432.19
531	Heart Lake Road	4.5	Chiniquacousy	Stormont, Dundas and Glengarry	166,525.16
532	Saddle Beach By-pass	9.4	County	Peel	205,237.32
533	Rose Point Road	1.8	Foley	County	34,529.03
534	Manchester Goodwood	12.7	County	Bruce	244,946.03
535	Hay Bay Road	6.0	South Fredericksburg	Parry Sound	20,969.86
536	Steep Rock Road	2.4	Atikokan	Ontario	9,116.59
538	Concession VI VII	5.5	Westmeath	Lennox and Addington	15,241.68
539	Hastings-Keene	12.5	County	Rainy River	152,625.33
541	Albinston-Bagot Townline	10.4	Williamstown and Bagot	Peterborough	16,169.30
543	Come, VI VII	1.5	Huntingdon	Renfrew	12,699.30
544	Come, XI XII	2.2	County	Dundas	4,093.07
545	Scollerie Road	9.1	County	Hastings	83,137.84
546	Don Lake Road	12.0	County	Prince Edward	14,137.88
547	Willbark Road	12.0	County	Parry Sound	187,959.84
548	Theresa-Corruich	6.7	Clarendon and Miller	Frontenac	37,280.78

(Authorized by Part XI of The Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1960-61
550	Sideroad 15/16	5.0	Wollaston	Hastings	\$ 23,127.21
551	Harlowe-Arden (part)	3.0	Kennebec	Frontenac	21,794.26
552	Loretto Road	12.0	County	Simcoe	414,817.93
553	Sand Point Road	4.2	McNab	Renfrew	41,590.99
554	Concession IV/V	1.9	Derby	Grey	37,100.39
555	O'Brien Street	.9	Widdfield	Nipissing	5,638.56
556	Plympton-Bosquet	3.2	Plympton	Frontenac	24,031.88
557	Parham-Wagaville	4.4	Hinchinbrooke	Lanibton	25,004.76
558	Carp northerly	3.7	Huntley	Carleton	17,987.85
559	Conc. IV/V	4.5	Lochiel	Stormont, Dundas and Glengarry	17,987.85
560	Hilldale Road	4.5	Municipality of Shuniah	Thunder Bay	18,147.17
561	River Road	3.5	Alpaouage	Thunder Bay	18,147.17
562	Shenson-Dobie	9.0	Municipality of Chapple	Rainy River	50,260.92
563	Webbwood bridge and approaches	3.14	Hallam	Sudbury	2,651.20
564	Conc. VIII (part)	3.3	Corrwall	Stormont, Dundas and Glengarry	18,033.90
565	Highway 62-Gilmour	1.8	Tudor and Cashell	Hastings	3,789.67
566	Nadoc boundary west-Conc. VI	6.8	Matilda	Hastings	25,834.92
569	Conc. VII/VIII	2.9	Matilda	Stormont, Dundas and Glengarry	21,277.42
570	Carlton westerly	3.0	Amosong	Teniskaming	15,500.00
571	Warburton-Long Point	6.0	County	Leeds and Grenville	98,996.27
572	County Road No. 21	9.7	Edwardsburg	Stormont, Dundas and Glengarry	71,899.60
573	County Road No. 22	5.2	Tyendinaga	Leeds and Grenville	24,793.93
576	Sideroad 22/23	1.9	Franklin	Hastings	4,492.54
577	Smith's Falls-North Gover (part)	10.0	County	Lanark	76,537.77
578	Port Cunningham Road	4.0	Franklin	Muskoka	23,823.43
579	Bellamy Road	2.5	Pakenham	Lanark	14,226.39
580	Gooderham-Haliburton	10.5	Dysart et al, Glamorgan	Haliburton	77,940.52
581	Essa-Innisfil Townline	2.0	Essa-Innisfil	Simcoe	137.80
582	County Road No. 65 (part)	4.2	Hallam	Wellington	90,800.53
583	North half Lot 7, Conc. III, 3 bridges	2.0	County	Sudbury	30,811.81
584	Sideroad 2/3, Conc. II and III	....	McMurrich	Parry Sound	18,378.64
585	Chatham Street	3.0	County	Elgin	61,249.45
586	Germanicus Road	1.0	Wolverforce	Renfrew	7,905.64
587	Havelock-Rush Point	4.75	Belmont and Methuen	Peterborough	6,496.37
588	Madoc-Foxboro (part)	4.0	County	Hastings	14,860.37
590	Wilson-Vennacher (part)	10.5	Griffith & Matawatchan, Clarendon & Miller	Renfrew and Frontenac	13,784.89
591	Detlor Road (part)	2.8	Dungannon	Hastings	19,125.77
592	Highway 62 to Locksley	2.1	Alice and Fraser	Renfrew	1,866.13
593	Wilson-Vennacher (part)	5.7	Denbigh, A. & A.	Lennox and Addington	15,051.73
594	Huntsville-Rosseau (part)	4.5	Stephenson and Stisted	Muskoka	14,094.92
595	Highway 16 to District Hospital	8.0	Coleman	Leeds and Grenville	3,485.64
596	Bass Lake Road	0.25	Chaffey	Temiskaming	13,988.52
597	Huntsville-Rosseau (part)	1.2	Mountjoy	Muskoka	9,978.29
598	Dalton Road	2.5	Thurlow	Cochrane	43,965.85
599	Conc. IV/V (part)	4.3	James	Hastings	1,555.82
600	3rd Street in Elk Lake	2.1	County	Temiskaming	2,957.94
601	County Road No. 1	0.4	County	Ontario	20,000.00
602	Rose Corners-Cambridge boundary	4.0	County	Prescott and Russell	13,707.84
603	Eastford Loop	3.6	Leitch (Glackmeyer)	Cochrane	9,777.11
604	Middle River Road (part)	7.0	McKellar	Parry Sound	14,756.31
		2.25			

(Authorized by Part XI of The Highway Improvement Act)

ROAD No.	DESCRIPTION OR LOCATION	LENGTH MILES	JURISDICTION (Township unless otherwise indicated)	COUNTY OR DISTRICT	EXPENDITURE 1960-61
605	Conc. II/III (part).....	1.25	Joly.....	Parry Sound.....	\$ 8,568.95
606	Vermilion River bridge westerly.....	3.5	Railfort.....	Sudbury.....	2,290.81
607	Victoria Road.....	3.7	Calvert.....	Oshana.....	35.91
608	Wino S'ly to Radcliffe boundary.....	2.7	Shenwood, Jones, Burns, Hagarty, etc.....	Renfrew.....	4,592.41
611	River Road through Springdale.....	1.2	West Collingbury.....	Simcoe.....	20,393.17
612	Highway 26 to Wasaga Beach.....	4.5	Radcliffe.....	Simcoe.....	3,315.47
613	Fullbrook westerly.....	8.0	Rathurst.....	Simcoe.....	13,572.71
614	Hampton boundary northerly.....	1.0	Christie.....	Parry Sound.....	20,089.31
615	Brightside, Hoptown.....	3.8	County.....	Lanark.....	1,436.28
616	Odessa N'ly Co. Rd. No. 1 (part).....	1.8	County.....	Lennox and Addington.....	1,845.51
	Preliminary Surveys.....		South Algonia.....	Renfrew.....	2,326.65
	TOTALS.....	947.39			\$8,135,212.42

APPENDIX No. 15
ROAD MILEAGES IN ONTARIO, DECEMBER, 1960

	TOTAL MILES	TYPE OF PAVEMENT					EARTH
		CONCRETE	BITUMINOUS	MULCH	GRAVEL AND CRUSHED STONE		
King's Highways	9,317.6	367.4	6,226.4	1,685.0	1,038.8		
Secondary Highways	2,547.2		78.7	363.4	2,105.1		
Total King's Highways	11,864.8	367.4	6,305.1	2,048.4	3,143.9		
County Roads	9,492.56	111.18	1,645.43	3,013.70	4,717.70	4.55	
Organized Townships	50,962.50	56.47	1,163.70	899.13	41,410.57	7,432.63	
Unorganized Townships	4,649.20			3.70	3,479.05	1,166.45	
Total Municipal Roads	65,104.26	167.65	2,809.13	3,916.53	49,607.32	8,603.63	
Total All Rural Highways and Roads	76,969.06	535.05	9,114.23	5,964.93	52,751.22	8,603.63	
Metropolitan Roads	303.29	4.04	283.27		13.38	2.60	
City, Town and Village Streets	8,557.76	501.95	2,762.55	1,329.96	3,543.53	419.77	
Total Urban Streets	8,861.05	505.99	3,045.82	1,329.96	3,556.91	422.37	
Total Rural Roads and Urban Streets — 1960	85,830.11	1,041.04	12,160.05	7,294.89	56,308.13	9,026.00	
“ — 1959	85,526.75	1,148.66	11,419.11	6,271.03	57,093.14	9,594.81	
“ — 1958	85,092.80	1,136.89	10,010.68	6,641.04	56,456.06	9,848.13	
“ — 1957	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02	
“ — 1956	83,508.24	1,337.88	9,188.73	5,750.73	56,597.11	10,433.76	

CHRONOLOGY—DEPARTMENT OF HIGHWAYS

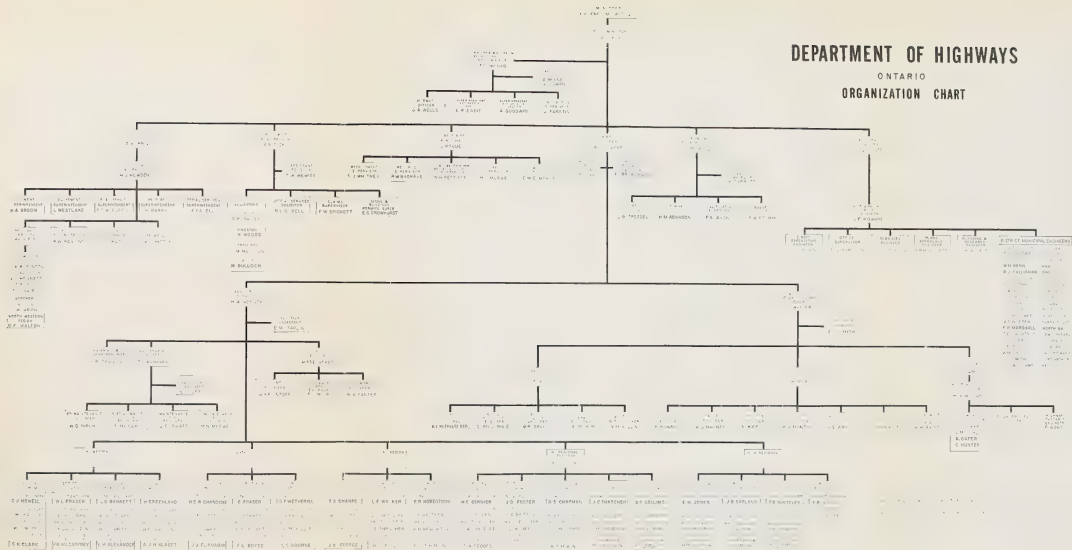
1960

- March 22 — Department estimates for 1960-61 presented to the Legislature by Hon. Fred M. Cass, Q.C.
- June 30 — Highway 401 opened to traffic between Newcastle and Port Hope.
- September 16 — Queen Elizabeth Way became a completely controlled-access highway between Toronto and Hamilton.
- September 16 — North lane of Highway 401 between Brockville and Prescott opened to traffic.
- September 17 — Ontario's section of the Trans-Canada Highway officially opened. Hon. Leslie M. Frost, Q.C., Prime Minister of Ontario, officiated at opening ceremonies held at Wawa.
- November 10 — Tenders called for first contract marking the start of construction of Highway 403.
- November 17 — Highway 401 officially opened to traffic, between Highway 25 and Highway 8, by Hon. Fred M. Cass, Q.C.
- November 25 — First stage of the Ottawa Queensway officially opened to traffic by Hon. Fred M. Cass, Q.C.

DEPARTMENT OF HIGHWAYS

ONTARIO

ORGANIZATION CHART



BINDING ---

APR 13 1970

